CONTENTS

TRADE NAME	MODEL	SET AND FOLDER No.
Airline	15BR-3035A Tel. Rec.	155-2
Arvin	554CCB, 554CCM	155-3
Concertone	401 Recorder	155-4
Crosley	11-106U, 11-107U, 11-108U, 11-109U (Ch. 302)	155-5
Firestone	4-B-61	155-6
Hallicrafters	5R10A	155-7
Hallicrafters	17804C, 17812, 17813, 17814, 17815-H, 17819, 17824, 17838, 17848, 17849, 17850, 20882 Tel. Rec.	155-8
Jackson	JP-50	155-9
Magnavox	Chassis CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297 Tel. Rec.	155-10
Masco	ME-27	155-11
Mitchell	1252, 1253	155-12
Norelco	PT-200, PT-300 Tel. Rec.	155-13
Sentinel	1U342K, 342K	155-14
Setchell-Carlson	151-A17, 151-A17-LR, 151-B17, 151-B17-LR, 151-B20, 151-B20LR, 151-C20, 151-C20-LR, Tel. Rec.	155-15
Stewart-Warner	9127-1A Tel. Rec.	155-1A
Sylvania	71M-1, 72B-1, 72M-1 (Ch. 1-502-1) Tel. Rec.	155-1A

PRODUCTION CHANGES

The following tabulation furnishes complete details on changes which occurred during receiver production. The receivers incorporating these changes are identified by coding stamped on rear surface of chassis. This coding consists of one or more letters following the word SERIES, as SERIES B, SERIES AC, etc., and corresponds to similarly lettered changes shown below. Chassis incorporate only that change indicated by letter designation i.e., chassis stamped "SERIES BE" does not include changes "A" or "B" or "D".

The circuit shown on this page applies to "SERIES C" chassis.

LETTER INCLUDED IN DESIGNATION FOLLOWING THE WORD "SERIES"	CHANGE INCORPORATED IN CHASSIS
"A"	There is no performance advantage to a chassis containing this change-circuit revisions are due to short supply of certain tubes. 1. Tube V12 (Video Amp.) was changed from a type 6AU6 to a type 6AG5. 2. Tube V16 (Keyer A.G.C.) was changed from a type 6AU8 to a type 6AG5. **In order for this receiver to operate properly, V12 and V16 must be the same type tube.**
"B"	There is no performance advantage to a chassis containing this change-circuit revisions are due to short supply of certain tubes. 1. Tube V1 (1st Sound I.F. Amp.) was changed from a type 6AU6 to a type 6BH6. 2. Connection point of resistor 70 (82 Ohms) was changed from pin 7 of tube V1 (1st Sound I.F. Amp.) to pin 2 of this tube. 3. Connection points of blue lead from pin 2 of transformer 68 (1st Sound I.F. transformer) and condenser 78 (220-Mmfd.) were changed from pin 2 of tube V1 (1st Sound I.F. Amp.) to pin 7 of this tube. 4. Tube V2 (2nd Sound I.F. Amp.-Limiter) was changed from a type 6AU8 to a type 6BH6. 5. Connection point of blue lead from pin 2 of transformer 74 (2nd Sound I.F. transformer) was changed from pin 2 of tube V2 (2nd Sound I.F. Amp.-Limiter) to pin 7 of this tube. **In order for this receiver to operate properly, V1 and V2 must be the same type tube.**
"C"	This change was incorporated so that proper centering can be obtained without introducing neck shadow. 1. Yellow lead of Focus Coil 236 was disconnected from the 340 volt B+ supply and reconnected to pin 7 of the deflection yoke socket. 2. Resistor 363 was disconnected from the 340 volt B+ supply and reconnected to pin 7 of the deflection yoke socket.

OSCILLOGRAMS

All oscillograms taken with ground lead of 'scope connected to receiver chassis (unless otherwise indicated) and with receiver controls set for normal reception of a station transmitting its standard test pattern.

Number appearing below asterisk specifies setting of horizontal sweep frequency control on 'scope.

*—This symbol on illustration indicates that wave form was observed on a 'scope whose vertical amplifier had very limited high frequency response (50 to 100 Kc).

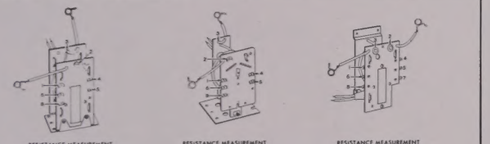
**—This symbol indicates that wave form was observed on a 'scope whose vertical amplifier frequency response was flat to within 20% up to 2 Mc.

508890 R.F. TUNER ASSEMBLY

QPNMLK JHOFE
508890 TUNER UNIT

BOTTOM VIEW OF CHASSIS SHOWING CONNECTIONS TO RF TUNER UNIT

ALTERNATE TYPES OF HORIZONTAL SWEEP TRANSFORMERS



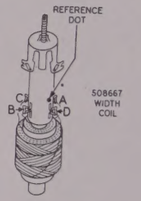
RESISTANCE MEASUREMENT
Between terminal 1 & 2— 40 Ohms
Between terminal 2 & 3—400 Ohms
Between terminal 5 & 8— 13 Ohms
Between terminal 6 & 8—6.5 Ohms
508679

RESISTANCE MEASUREMENT
Between terminal 1 & 2— 40 Ohms
Between terminal 2 & 3—400 Ohms
Between terminal 5 & 8— 11 Ohms
Between terminal 6 & 8—5.5 Ohms
508678

RESISTANCE MEASUREMENT
Between terminal 1 & 2— 40 Ohms
Between terminal 2 & 3—400 Ohms
Between terminal 5 & 8— 5 Ohms
Between terminal 6 & 8—2.5 Ohms
508679

These three types of transformers all carry the same Part No. and are directly interchangeable.

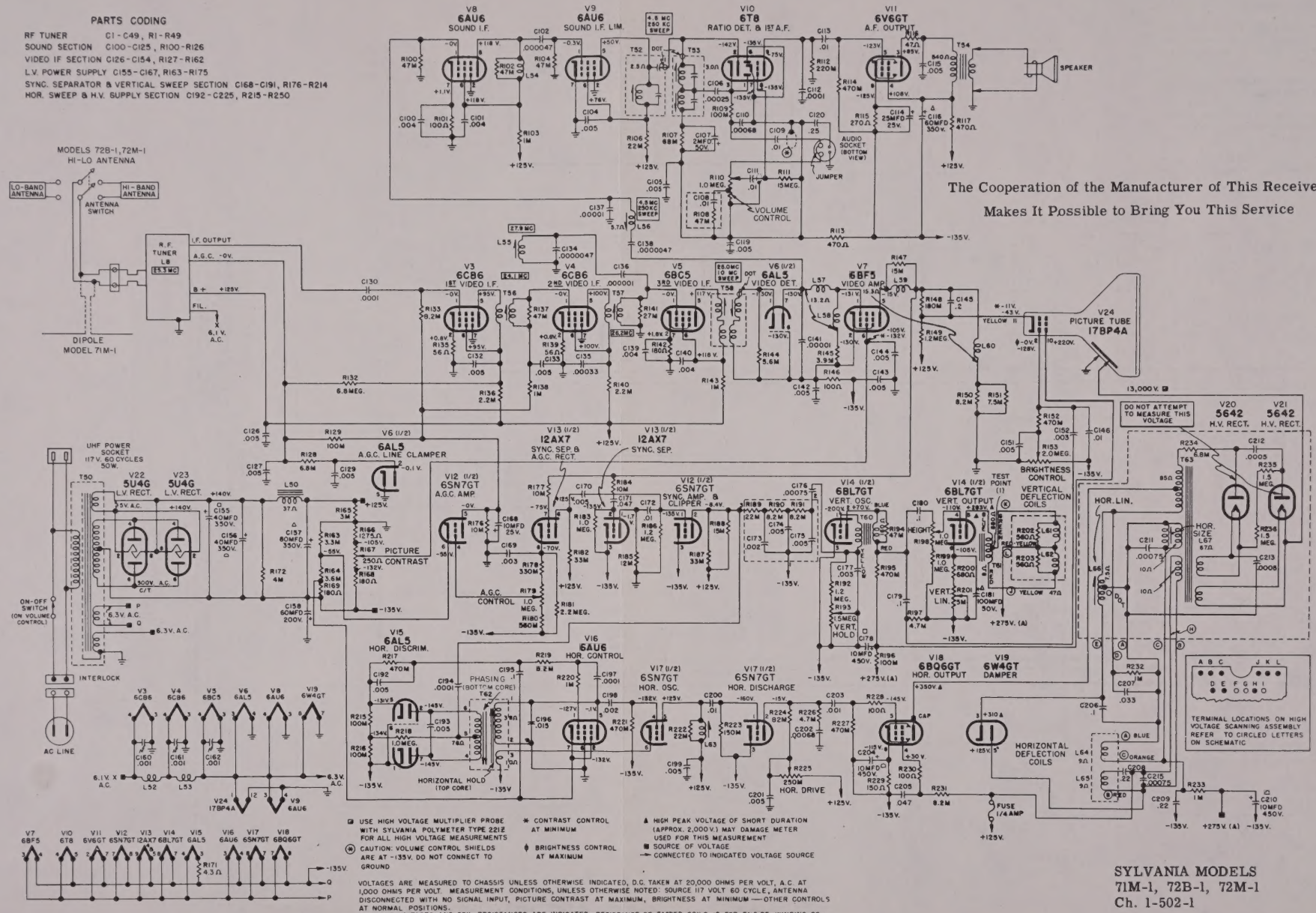
Connection terminals are numbered to correspond to similarly numbered terminals shown in the complete circuit diagram on this page.



Lettered terminals in illustrations correspond to similarly lettered terminals on the circuit diagram.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

STEWART-WARNER MODEL 9127-A


PARTS CODING
RF TUNER C1-C49, R1-R49
SOUND SECTION C100-C125, R100-R126
VIDEO IF SECTION C126-C154, R127-R162
L.V. POWER SUPPLY C155-C167, R163-R175
SYNC. SEPARATOR & VERTICAL SWEEP SECTION C168-C191, R176-R214
HOR. SWEEP & H.V. SUPPLY SECTION C192-C225, R215-R250
The Cooperation of the Manufacturer of This Receiver
Makes It Possible to Bring You This Service
V8 6AU6 SOUND I.F.
V9 6AU6 SOUND I.F. LIM.
V10 6T8 RATIO DET. & 1ST A.F.
V11 6V6GT A.F. OUTPUT
SPEAKER
VOLUME CONTROL
AUDIO SOCKET (BOTTOM VIEW)
JUMPER
MODELS 72B-1, 72M-1 HI-LO ANTENNA
LO-BAND ANTENNA
HI-BAND ANTENNA
ANTENNA SWITCH
DIPOLE MODEL 71M-1
R.F. TUNER L8
I.F. OUTPUT
A.G.C. -0V.
B+ +128V.
FIL.
6.1 V. A.C.
V3 6CB6 1ST VIDEO I.F.
V4 6CB6 2ND VIDEO I.F.
V5 6BC5 3RD VIDEO I.F.
V6 (1/2) 6AL5 VIDEO DET.
V7 6BF5 VIDEO AMP.
V24 PICTURE TUBE 17BP4A
13,000 V.
DO NOT ATTEMPT TO MEASURE THIS VOLTAGE
V20 5642 H.V. RECT.
V21 5642 H.V. RECT.
BRIGHTNESS CONTROL
VERTICAL DEFLECTION COILS
HOR. LIN.
HOR. SIZE
HEIGHT
VERT. LIN.
VERT. HOLD
TEST POINT (1)
UHF POWER SOCKET 117 V. 60 CYCLES 50W.
V22 5U4G L.V. RECT.
V23 5U4G L.V. RECT.
ON-OFF SWITCH (ON VOLUME CONTROL)
INTERLOCK
AC LINE
V6 (1/2) 6AL5 A.G.C. LINE CLAMPER
V13 (1/2) 12AX7 SYNC. SEP. & A.G.C. RECT.
V13 (1/2) 12AX7 SYNC. SEP.
V12 (1/2) 6SN7GT A.G.C. AMP.
V12 (1/2) 6SN7GT SYNC. AMP. & CLIPPER
V14 (1/2) 6BL7GT VERT. OSC.
V14 (1/2) 6BL7GT VERT. OUTPUT
PICTURE CONTRAST
A.G.C. CONTROL
V15 6AL5 HOR. DISCRIM.
V16 6AU6 HOR. CONTROL
PHASING (BOTTOM CORE)
HORIZONTAL HOLD (TOP CORE)
V17 (1/2) 6SN7GT HOR. OSC.
V17 (1/2) 6SN7GT HOR. DISCHARGE
V18 6BQ6GT HOR. OUTPUT
V19 6W4GT DAMPER
HOR. DRIVE
HORIZONTAL DEFLECTION COILS
FUSE 1/4 AMP
TERMINAL LOCATIONS ON HIGH VOLTAGE SCANNING ASSEMBLY REFER TO CIRCLED LETTERS ON SCHEMATIC
V7 6BF5 V10 6T8 V11 6V6GT V12 6SN7GT V13 12AX7 V14 6BL7GT V15 6AL5 V16 6AU6 V17 6SN7GT V18 6BQ6GT
USE HIGH VOLTAGE MULTIPLIER PROBE WITH SYLVANIA POLYMETER TYPE 221Z FOR ALL HIGH VOLTAGE MEASUREMENTS
CAUTION: VOLUME CONTROL SHIELDS ARE AT -135V. DO NOT CONNECT TO GROUND
* CONTRAST CONTROL AT MINIMUM
♦ BRIGHTNESS CONTROL AT MAXIMUM
▲ HIGH PEAK VOLTAGE OF SHORT DURATION (APPROX. 2,000 V.) MAY DAMAGE METER USED FOR THIS MEASUREMENT
■ SOURCE OF VOLTAGE
→ CONNECTED TO INDICATED VOLTAGE SOURCE
VOLTAGES ARE MEASURED TO CHASSIS UNLESS OTHERWISE INDICATED, D.C. TAKEN AT 20,000 OHMS PER VOLT, A.C. AT 1,000 OHMS PER VOLT. MEASUREMENT CONDITIONS, UNLESS OTHERWISE NOTED: SOURCE 117 VOLT 60 CYCLE, ANTENNA DISCONNECTED WITH NO SIGNAL INPUT, PICTURE CONTRAST AT MAXIMUM, BRIGHTNESS AT MINIMUM — OTHER CONTROLS AT NORMAL POSITIONS.
AVERAGE VOLTAGES AND COIL RESISTANCES ARE INDICATED. RESISTANCE OF TAPPED COILS IS FOR ENTIRE WINDING. COIL RESISTANCE IS NOT SHOWN WHERE READINGS ARE TOO SMALL OR WIDELY VARIABLE.

SYLVANIA MODELS
71M-1, 72B-1, 72M-1
Ch. 1-502-1

PRELIMINARY DATA
The data contained in this folder is published in advance of regular PHOTOFACT Coverage

SET 155 FOLDER 1A

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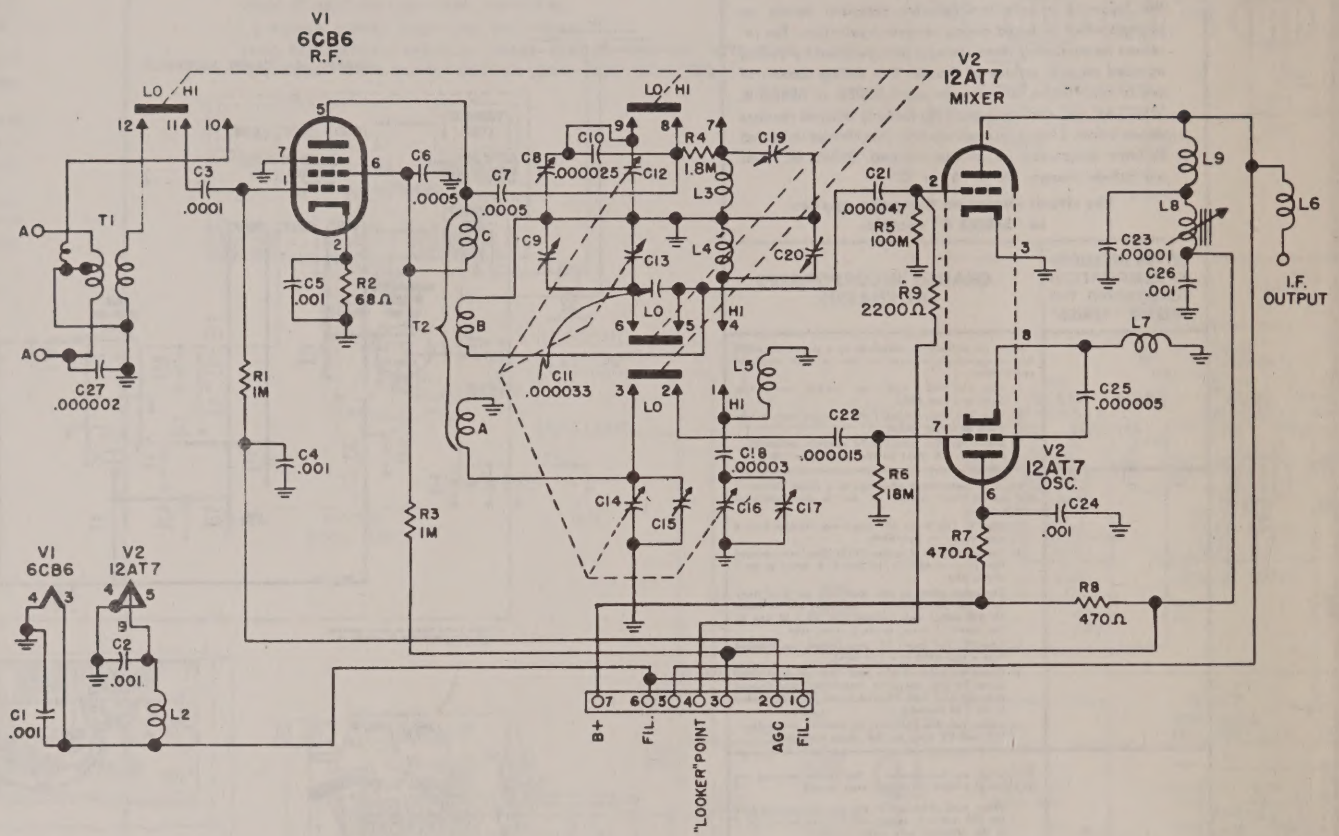

RF TUNER SCHEMATIC FOR 1-502-1 TV CHASSIS

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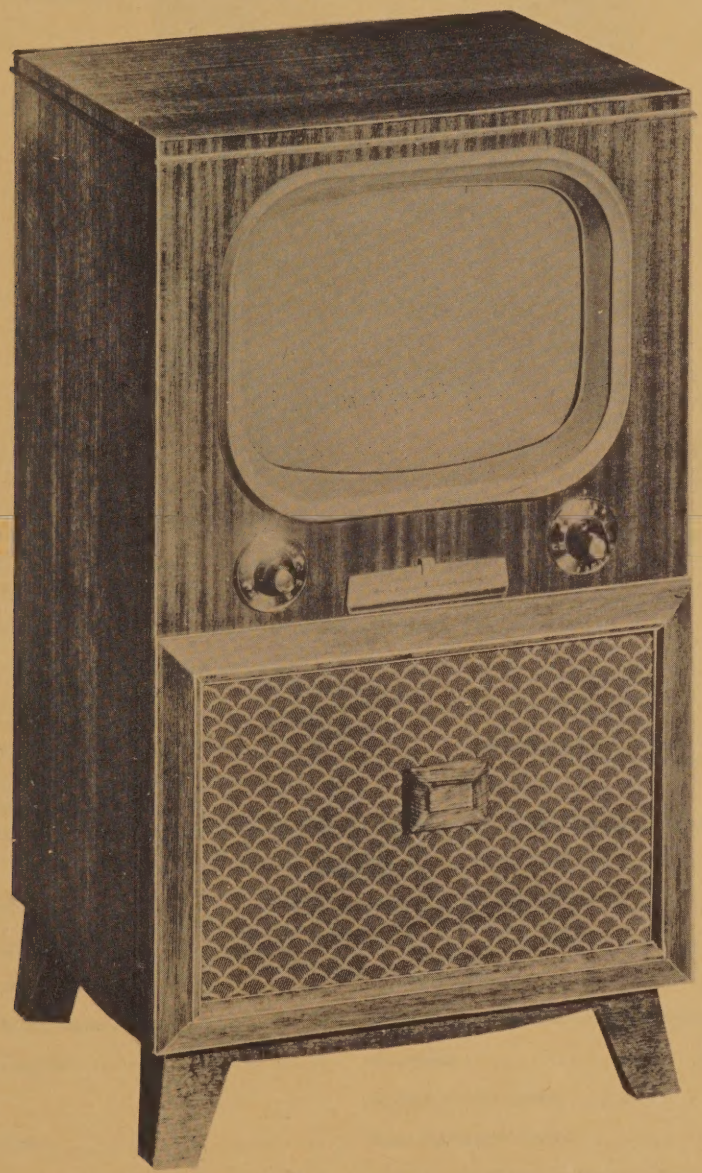

AIRLINE
MODEL 15BR-3035A

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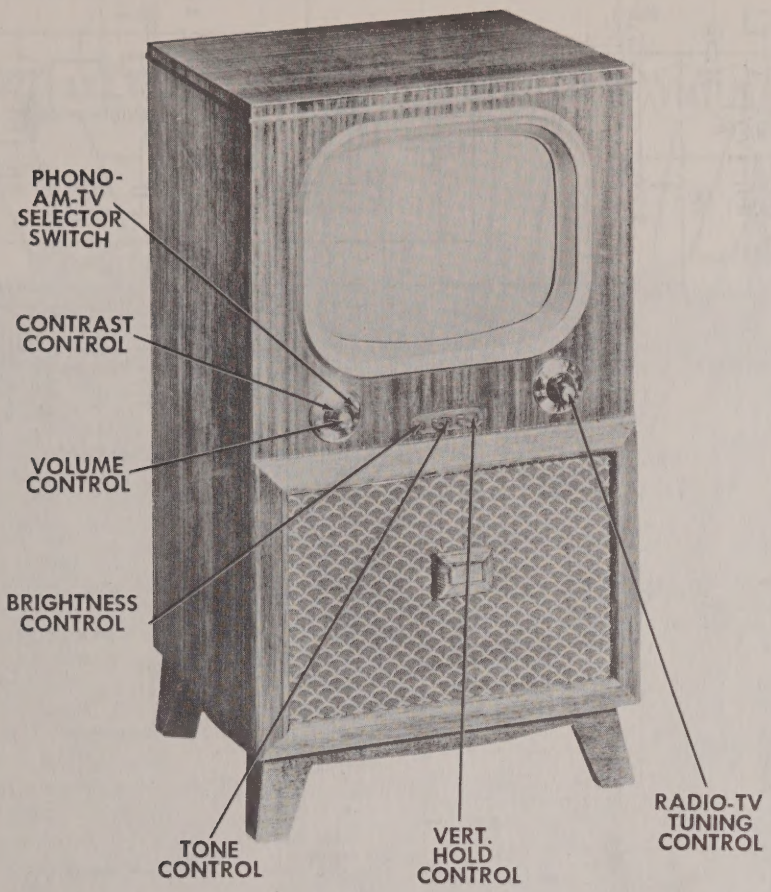
AIRLINE
MODEL 15BR-3035A



TRADE NAME	Airline Model 15BR-3035A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	TV-AM-Phono Combination Receiver
TUBES	Twenty four
POWER SUPPLY	110-115 Volts AC-60 Cycle
RATING	(TV) 1.9 Amp. at 115 Volts AC (RADIO) 1.6 Amp. at 115 Volts AC
TUNING RANGE—	(TV) Channels 2 thru 13 (AM) 540-1600KC

INDEX

Alignment Instructions 6, 7
Drive Cord Stringing 7
Disassembly Instructions 7
Horizontal Sweep Circuit Adjustments 7
Parts List and Description 12, 13, 14
Photographs
Cabinet - Rear view 11
Capacitor and Alignment Identification 4, 9
Photographs (cont.)
Chassis - Top View 3
RF Tuner 10
Resistor and Inductor Identification 15, 16
Schematic 2
Schematic (AM Tuner) 11
Tube Placement Charts 5
Voltage and Resistance Measurements 8

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT SEE PHOTOFACT SET #107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3

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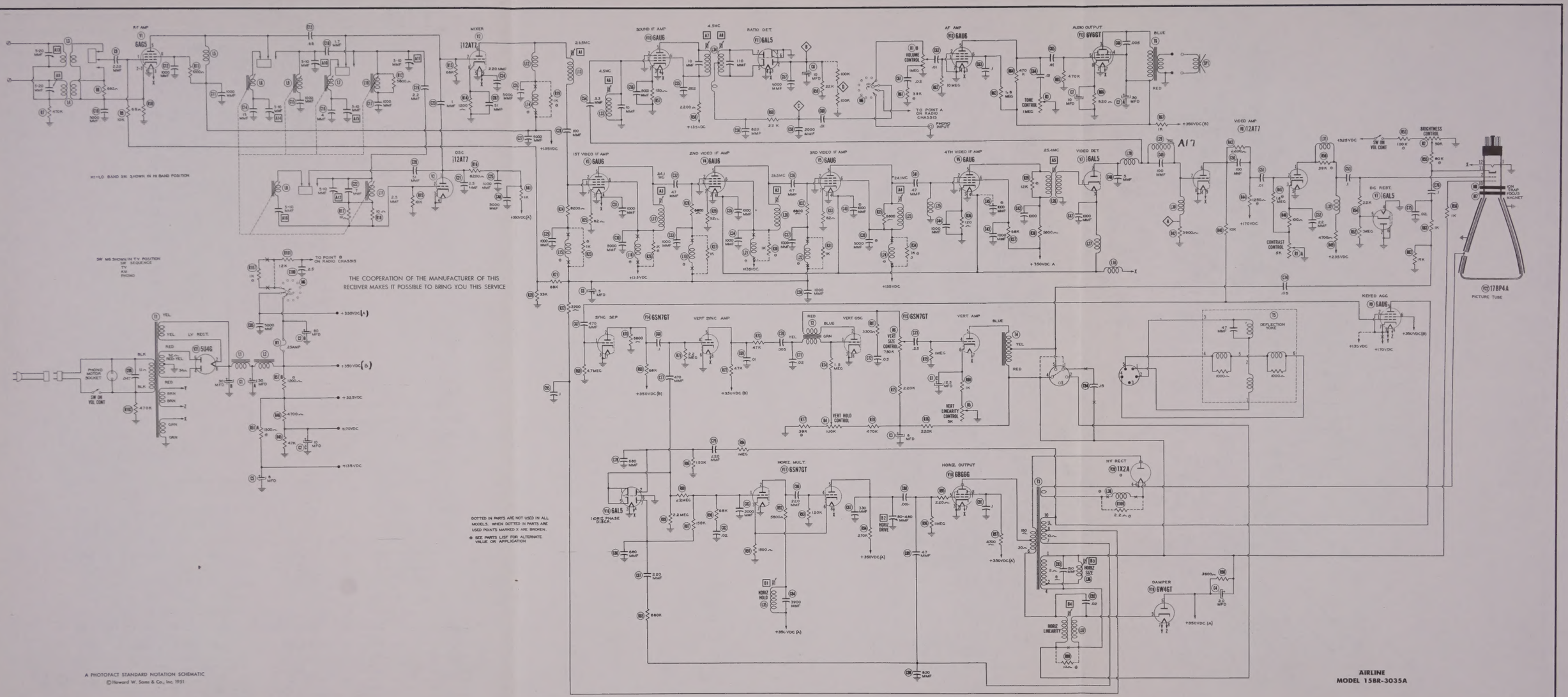
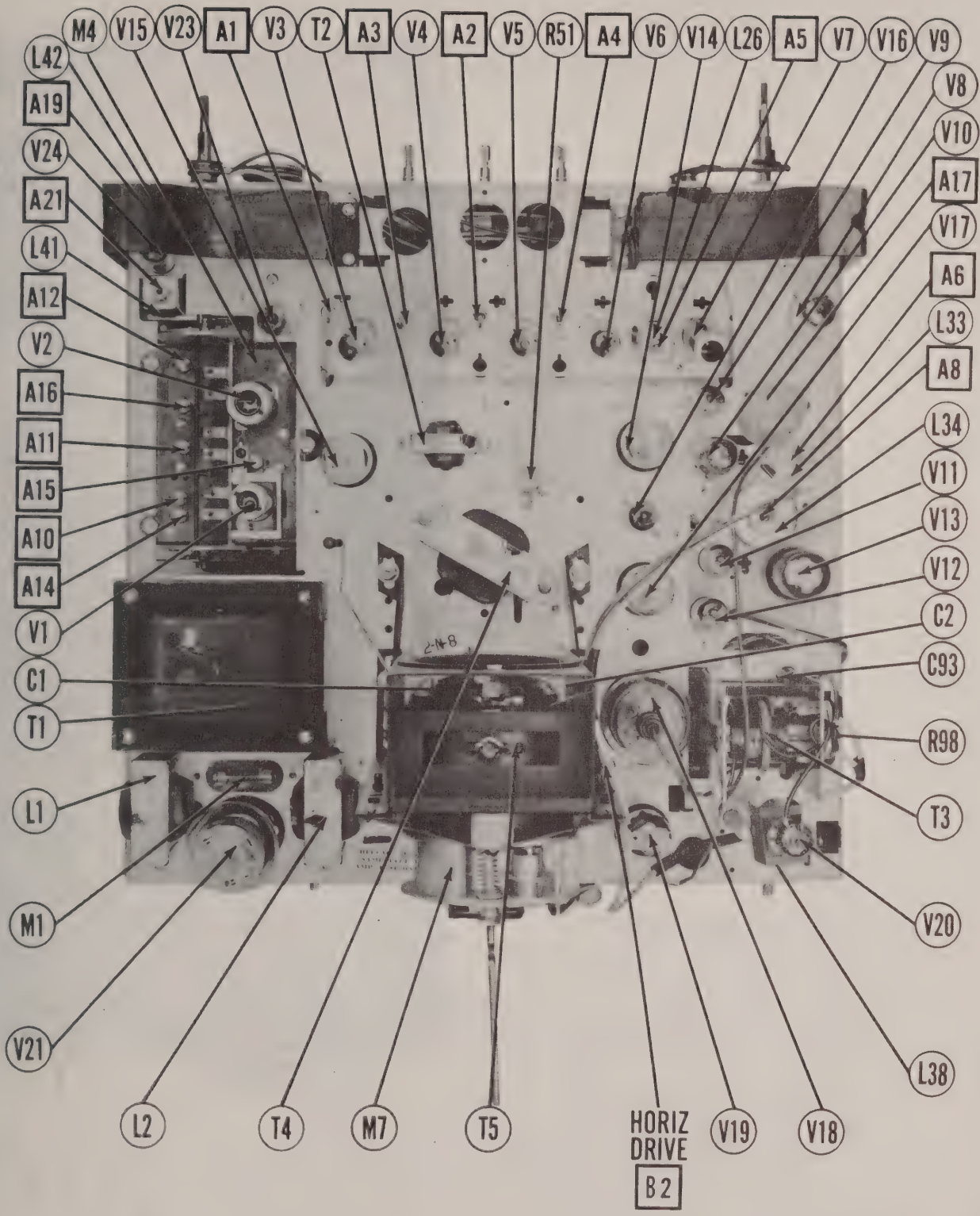
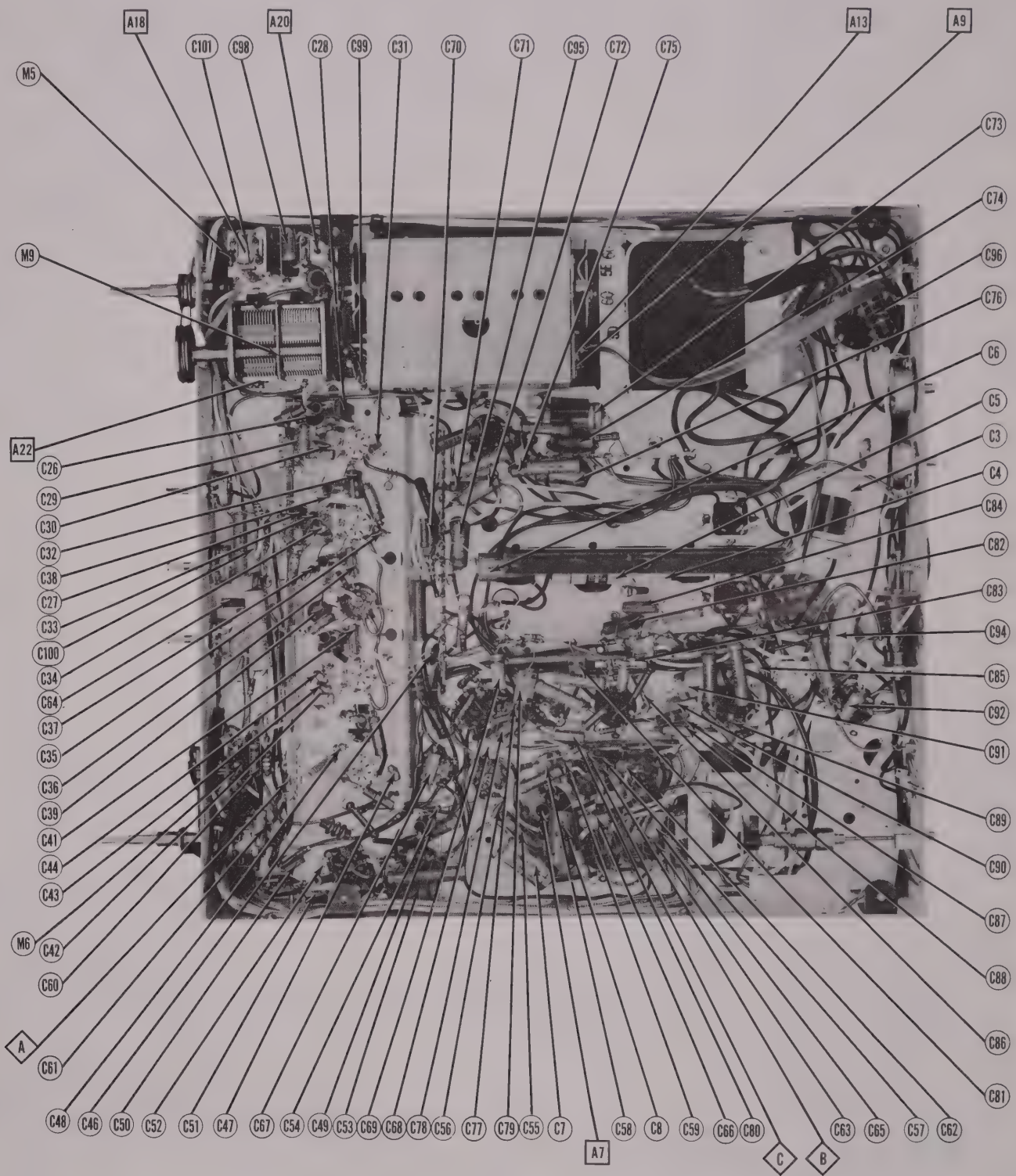
AIRLINE
MODEL 15BR-3035A



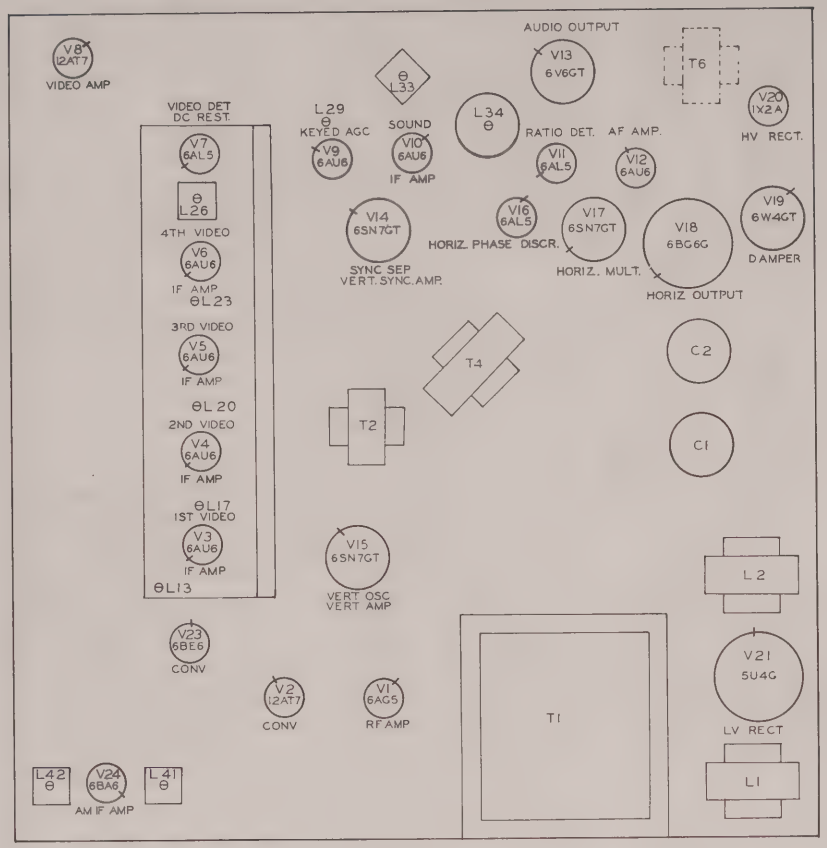
AIRLINE
MODEL 15BR-3035A



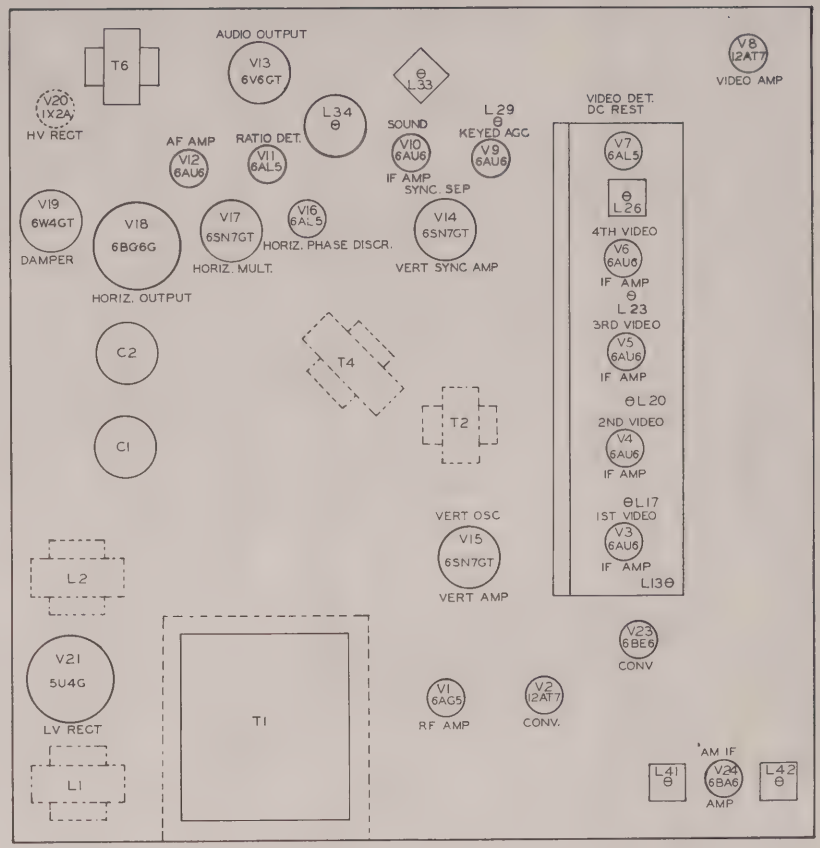
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

MODEL 15BR-3035A

AIRLINE

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 12AT7 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Connect a 1000MMF capacitor across the oscilloscope vertical input terminals and a 10KΩ resistor in series with the vertical input lead.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	1000MMF	High side to pin 7, (grid) of 12AT7, (V2). Low side to chassis.	Not used.	26.5MC (Unmod.)	Any	USE VTVM DC probe to point (A). Common to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain 1 volt above no signal noise.
2.	"	"	"	24.1MC	"	"	A3, A4	"
3.	"	"	"	25.4MC	"	"	A5	"
4.	"	"	25MC (10MC SWP)	23.75MC 26.75MC	"	Vert. Amp. to point (A). Low side to chassis.	A5	Adjust for response curve similar to fig. 1 with marker as shown.
5.	With the sweep generator connected as in step 4, and the VTVM connected as in step 1, adjust the marker generator until the marker reaches the peak. Record the VTVM reading, keeping generator output constant. Adjust marker generator until the marker reaches the shoulder on the curve. Record the VTVM reading. The ratio between the two readings should be between 1.4 and 1.6, if not repeat entire alignment.							

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from point B to chassis. The junction of these two resistors is alignment point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	1000MMF	High side to pin 7, (plate) of 6AL5, (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point (B). Common to chassis.	A6, A7	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to point (C). Common to point (D).	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	1000MMF	High side to pin 7, (plate) of 6AL5, (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. amp. to point (B). Low side to chassis.	A6, A7	Disconnect stabilizor capacitor C8. Adjust for maximum amplitude and symmetry as per fig. 2.
7.	"	"	"	"	"	Vert. amp. to point (C). Low side to chassis.	A8	Reconnect capacitor C8. Adjust A8 so 4.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines

TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 12AT7 in its socket.
Pre-set the trimmer screws as shown in figure 5.
Turn the tuner to the top of its stroke in the low band position.
Pre-set all coil tuning cores so the cores projects 1.6" above the coil mounting strip.
Turn the core of L11, (Low band oscillator), an additional 4 turns out of the coil.

LOW BAND ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
Leave the RF filter, used during video IF alignment, connected to the scope lead.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	85MC (10MC SWP)	83.25MC	6	Vert. amp. to point (A). Low side to chassis.	A9, A10, A11	Adjust for maximum amplitude of response curve.
9.	"	"	"	"	"	"	A12	Adjust to place video marker as shown in fig. 4
10	"	"	79MC (10MC SWP)	77.25MC	5	"		Check all low band channels for response similar to fig. 4. If necessary retouch A10 and A11 for compromise adjustment which will give best response across the low band channels. If trimmer A9 reaches maximum cap capacity, turn core of L9 into coil.
			69MC (10MC SWP)	67.25MC	4			
			63MC (10MC SWP)	61.25MC	3			
			57MC (10MC SWP)	55.25MC	2			

HIGH BAND ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC	13	Vert. amp. to point (A). Low side to chassis.	A13, A14, A15	Adjust for maximum amplitude of response curve.
12.	"	"	"	"	"	"	A16	Adjust to place video marker as shown in fig. 4. If necessary repeat step 11.
13.	"	"	207MC (10MC SWP)	205.25MC	12	"		Check all high band channels for response similar to fig. 4. If necessary retouch A14, and A15 for compromise adjustment which will give best response across the high band channels.
			201MC (10MC SWP)	199.25MC	11			
			195MC (10MC SWP)	193.25MC	10			
			189MC (10MC SWP)	187.25MC	9			
			183MC (10MC SWP)	181.25MC	8			
			177MC (10MC SWP)	175.25MC	7			

4.5MC TRAP ADJUSTMENT

After alignment is completed and set is returned to original operation, tune in a TV station and adjust the tuning until sound just begins to appear in the picture. Adjust A17 to remove any indication of 4.5MC beat interference. If adjustment of A17 will not completely eliminate the interference, try a slight retouching of A6.

AM ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.1MFD	High side to pin 7, (grid) of 6BE6, (V23). Low side to chassis.	455KC (400∿Mod.)		Tuning gang fully open.	Across voice coil	A17, A18, A19, A20	Adjust for maximum output.
15.	"	"	1620KC		"	"	A21	"
16.		Loop	1400KC		Tune for maximum output.	"	A22	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

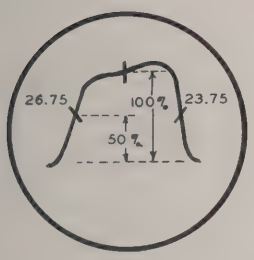


FIG. 1

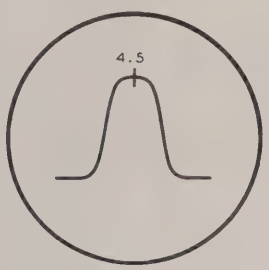


FIG. 2

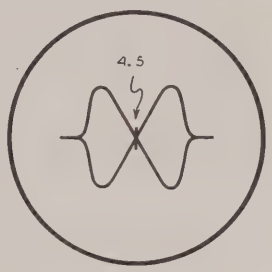


FIG. 3

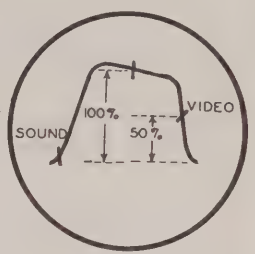
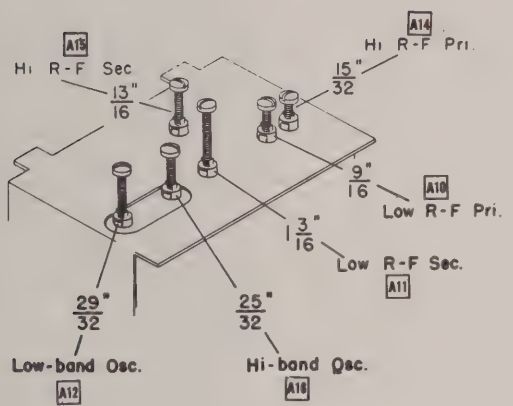
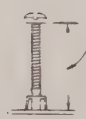


FIG. 4



ALIGNING TRIMMERS



The dimensions shown are approx. from the shoulder of screw head to mounting base

FIG. 5

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station preferably a test pattern.
Adjust the horizontal hold thumbscrew until the picture synchronizes horizontally. If the thumbscrew shows insufficient range, turn it to the center of its range and adjust the coil slug, (B1), until the picture synchronizes.
Adjust the horizontal drive trimmer, (B2), counter-clockwise until bright vertical lines appear in the picture, then turn clockwise to 1/4 turn past the point where the vertical lines just disappear.
Adjust the horizontal size slug, (B3), until the picture is slightly wider than necessary to fill the mask horizontally.
Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove two screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect phono power plug.
5. Disconnect phono audio jack.
6. Disconnect speaker.
7. Disconnect AM loop.
8. Remove four 3/32" hex head bolts from chassis. Remove chassis.
9. Remove two phillips head screws from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

DIAL CORD STRINGING

TUNING GANG FULLY CLOSED

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.1VDC	.7VDC	6.3VAC	0V	140VDC	135VDC	.7VDC		
V 2	12AT7	260VDC	§-7.8VDC	0V	0V	0V	135VDC	0V	3.8VDC	6.3VAC
V 3	6AU6	0V	0V	0V	6.3VAC	135VDC	135VDC	1.2VDC		
V 4	6AU6	0V	0V	0V	6.2VAC	135VDC	135VDC	1.2VDC		
V 5	6AU6	0V	0V	0V	6.2VAC	135VDC	135VDC	1.2VDC		
V 6	6AU6	0V	0V	0V	6.2VAC	320VDC	130VDC	1.4VDC		
V 7	6AL5	0V	0V	6.1VAC	0V	1.3VDC	0V	-.6VDC		
V 8	12AT7	190VDC	.9VDC	42VDC	0V	0V	135VDC	-.4VDC	0V	6.3VAC
V 9	6AU6	130VDC	170VDC	¶0V	¶6.3VAC	-.3VDC	350VDC	170VDC		
V 10	6AU6	0V	0V	0V	6.3VAC	115VDC	115VDC	1.2VDC		
V 11	6AL5	0V	-.5VDC	6.3VAC	0V	-.3VDC	0V	-.3VDC		
V 12	6AU6	-.5VDC	0V	6.3VAC	0V	125VDC	27VDC	0V		
V 13	6V6GT	0V	0V	325VDC	325VDC	0V	350VDC	6.3VAC	24VDC	
V 14	6SN7GT	-3.7VDC	30VDC	0V	-1.1VDC	80VDC	0V	0V	6.3VAC	
V 15	6SN7GT	§-4VDC §-27VDC	100VDC	0V	§0V §-1.8VDC	440VDC 460VDC	16VDC 24VDC	6.3VAC	0V	
V 16	6AL5	2VDC	-.4VDC	0V	6.3VAC	2VDC	0V	-.4VDC		
V 17	6SN7GT	§-.5VDC	315VDC	12.5VDC	§-5.3VDC	130VDC	12.5VDC	0V	6.3VAC	
V 18	6BG6GT	0V	0V	0V	-26VDC	-26VDC	0V	6.3VAC	290VDC	Top Cap *
V 19	6W4GT	0V	0V	475VDC	475VDC	350VDC	475VDC	¶6.3VAC	¶0V	
V 20	1X2A	* DO NOT MEASURE.								Top Cap *
V 21	5U4G	0V	360VDC	0V	340VAC	1.2VAC	340VAC	48VAC	360VDC	
V 22	17BP4A	0V	1.5VDC	Pin 10 460VDC	Pin 11 0V	Pin 12 6.3VAC	H.V. Connector * * 9KV			
V 23	6BE6	▲§-5.3VDC	0V	0V	95VDC 6.3VAC	▲95VDC	▲95VDC	0V		
V 24	6BA6	▲.1VDC	0V	0V	6.3VAC	▲95VDC	▲95VDC	▲.2VDC		

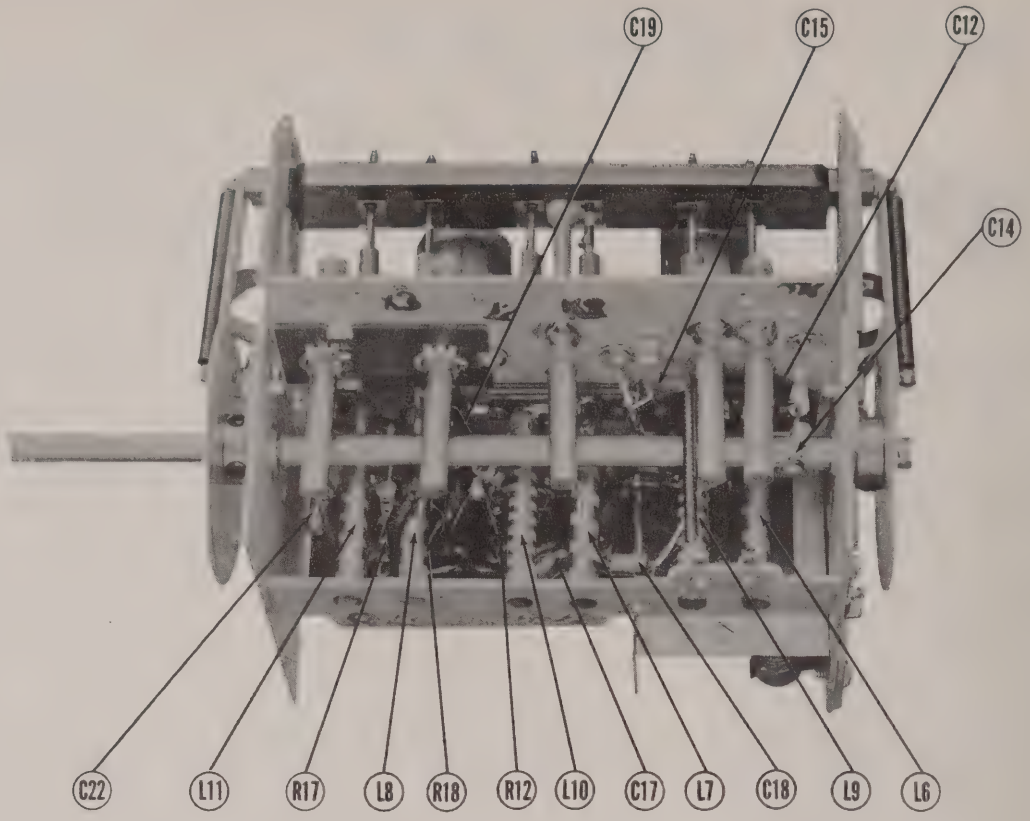
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED.
¶ MEASURE FROM 170VDC LINE.
* DO NOT MEASURE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
* * USE EXTREME CAUTION WHEN MEASURING THIS VOLTAGE.
▲ MEASURED IN AM RADIO POSITION.

RESISTANCE READINGS

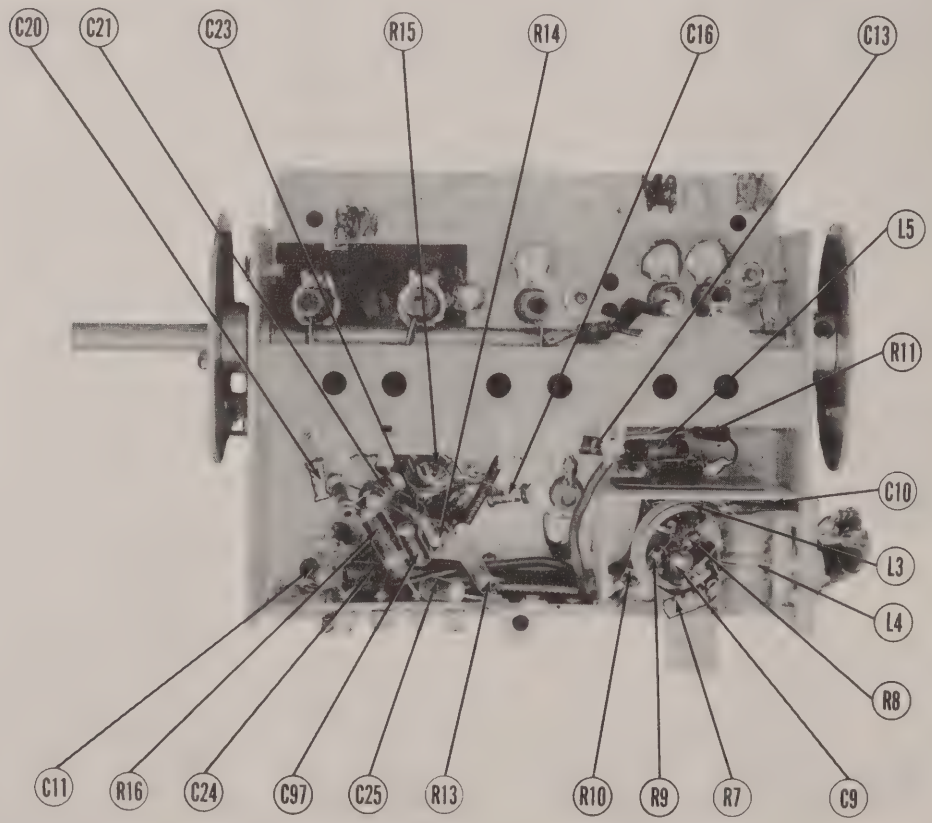
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	43KΩ	68Ω	.1Ω	0Ω	†2.7KΩ	†3.7KΩ	68Ω		
V 2	12AT7	†9.2KΩ	10KΩ	0Ω	0Ω	0Ω	†2.7KΩ	68KΩ	1.2KΩ	.1Ω
V 3	6AU6	110KΩ	0Ω	0Ω	.1Ω	†2.7KΩ	†2.7KΩ	82Ω		
V 4	6AU6	105KΩ	0Ω	0Ω	.2Ω	†2.7KΩ	†2.7KΩ	82Ω		
V 5	6AU6	105KΩ	0Ω	0Ω	.2Ω	†2.7KΩ	†2.7KΩ	82Ω		
V 6	6AU6	2.5Ω	0Ω	0Ω	.2Ω	†5.6KΩ	†68KΩ	120Ω		
V 7	6AL5	.8Ω	0Ω	.3Ω	0Ω	1Meg	0Ω	3.9KΩ		
V 8	12AT7	†6KΩ	1.6Meg	5.1KΩ	0Ω	0Ω	†8KΩ	3.9KΩ	0Ω	.1Ω
V 9	6AU6	†20KΩ	†6KΩ	¶0Ω	¶.1Ω	100KΩ	†78Ω	†6KΩ		
V 10	6AU6	2.6Ω	0Ω	0Ω	.1Ω	†5KΩ	†5KΩ	120Ω		
V 11	6AL5	0Ω	22KΩ	.1Ω	0Ω	Inf.	0Ω	Inf.		
V 12	6AU6	10Meg	0Ω	.1Ω	0Ω	†470KΩ	†1.8Meg	0Ω		
V 13	6V6GT	0Ω	0Ω	†1.5KΩ	†1KΩ	470KΩ	†78Ω	.1Ω	820Ω	
V 14	6SN7GT	4.7Meg	†22KΩ	0Ω	2.2Meg	†47KΩ	0Ω	0Ω	.1Ω	
V 15	6SN7GT	1.6Meg 1.5Meg	#1.2Meg	0Ω	1Meg	#700Ω	6KΩ 1KΩ	.1Ω	0Ω	
V 16	6AL5	2.2Meg	150KΩ	0Ω	.1Ω	2.2Meg	0Ω	4.5Meg		
V 17	6SN7GT	4.4Meg	†5.7KΩ	1.5KΩ	120KΩ	†270KΩ	1.5KΩ	0Ω	.1Ω	
V 18	6BG6G	Inf.	0Ω	0Ω	1Meg	1Meg	100KΩ	.1Ω	†4.7KΩ	Top Cap #35Ω
V 19	6W4GT	Inf.	Inf.	†3.6KΩ	†3.6KΩ	†78Ω	†3.6KΩ	¶.1Ω	¶0Ω	
V 20	1X2A	PINS 1-9 HAVE INF. RESISTANCE								Top Cap #215Ω
V 21	5U4G	Inf.	25KΩ	Inf.	34Ω	470KΩ	32Ω	470KΩ	25KΩ	
V 22	17BP4A	0Ω	1Meg	Pin 10 †4.7KΩ	Pin 11 †130KΩ †90KΩ	Pin 12 .1Ω				
V 23	6BE6	47KΩ	.8Ω	0Ω	.1Ω	▲†13KΩ	▲†13KΩ	2.2Meg		
V 24	6BA6	2.2Meg	0Ω	0Ω	.1Ω	▲†13KΩ	▲†13KΩ	180Ω		

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED.
† MEASURED FROM PIN 8 OF V21.
# MEASURED FROM PIN 3 OF V19.
▲ MEASURED IN AM RADIO POSITION.
¶ MEASURED FROM 170VDC LINE.

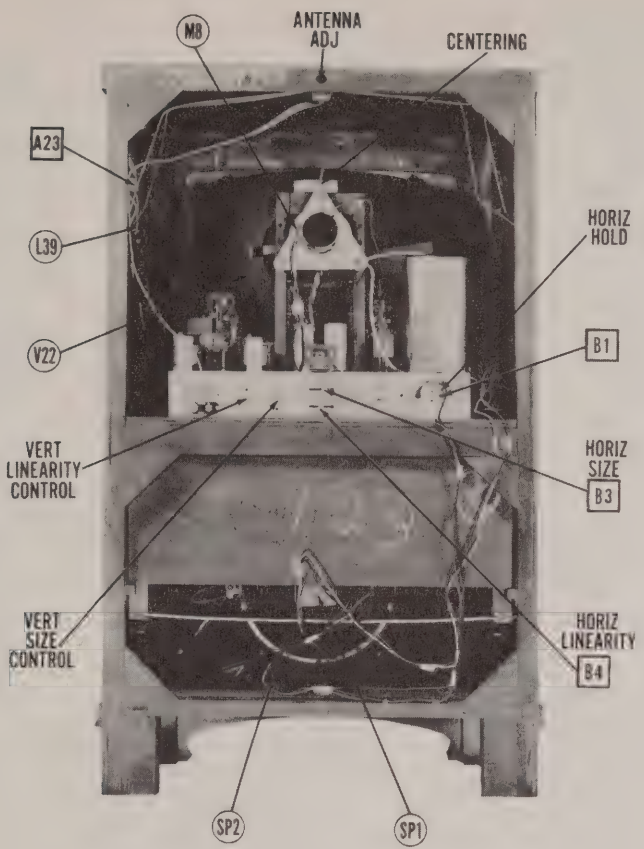
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



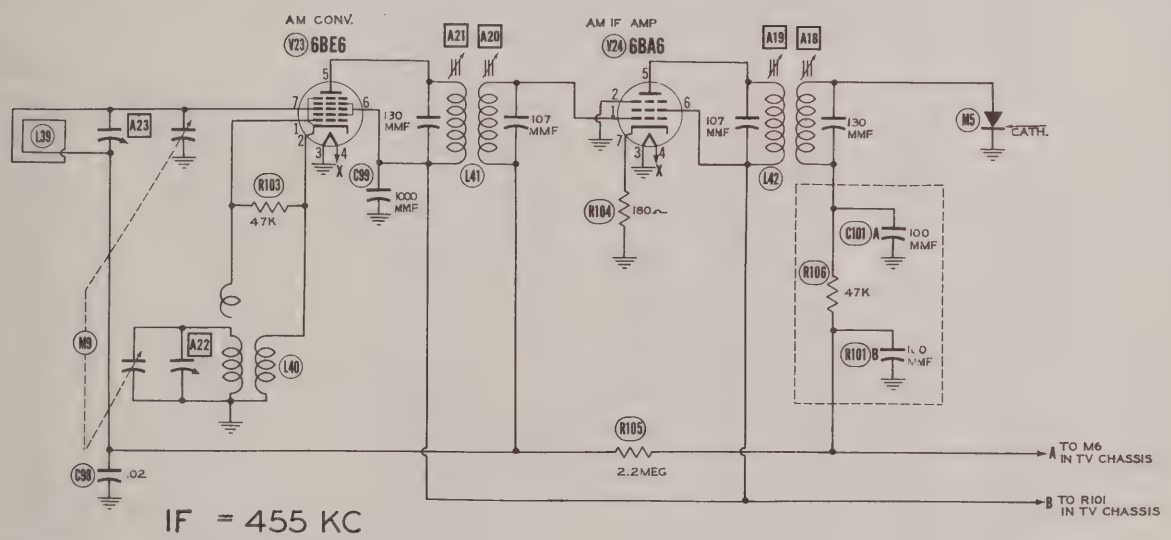
RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW



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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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AM TUNER SCHEMATIC

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	12AT7	12AT7	9A	
V3	1st Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd Video IF Amp.	6AU6	6AU6	7BK	
V6	4th Video IF Amp.	6AU6	6AU6	7BK	
V7	Video Detector-DC Restorer	6AL5	6AL5	6BT	
V8	Video Amplifier	12AT7	12AT7	9A	
V9	Keyed AGC	6AU6	6AU6	7BK	
V10	Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier	6AU6	6AU6	7BK	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Sync Separator-Vert. Sync. Amp.	6SN7GT	6SN7GT	8BD	
V15	Vert. Oscillator-Vert. Amplifier	6SN7GT	6SN7GT	8BD	
V16	Horizontal Phase Discriminator	6AL5	6AL5	6BT	
V17	Horiz. Mult	6SN7GT	6SN7GT	8BD	
V18	Horiz. Output	6BG6G	6BG6G		
V19	Damper	6W4GT	6W4GT	4CG	
V20A	HV Rectifier	1X2A	1X2A	7CB	
B	HV Rectifier	1X2	1X2	7CB	
V21	LV Rectifier	5U4G	5U4G	5T	
V23	AM Converter	6BE6	6BE6	7CH	
V24	AM IF Amplifier	6BA6	6BA6	7BK	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: AIRLINE PART No.	SYLVANIA PART No.	THOMAS PART No.	RMA BASE TYPE	NOTES
V22	17BP4A	17BP4A	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450	8C-18487	AH-B4-105		UPT409		TVL-2759 TVA-1207	▲ Filter ■ Filter
B	30	450							▲ Vert. Amp. Cathode
C	125	25							▲ Audio Output Dec.
C2A	30	450	8C-17845	AFH 3-40		UPT36145		TVL-3790	■ Filter
B	60	450							▲ Decoupling
C	10	450							
C3	8	450	8C-13453	PRS450/8		BR845A		TVA-1704	Vert. Amp. Dec.
C4	20	150	8C-19548	PRS150/20		BR2015A		TVA-1410	Accelerating Anode Dec.
C5	8	450	8C-13453	PR8450/8		BR845A		TVA-1704	Decoupling
C6	5	50	8C-19434	PRS150/4		BR550		TVA-1303	AGC Filter
C7	10	50	8C-17783	PRS50/10		BR105		TVA-1304	Audio Output Cathode
C8	10	75	8C-19564	PRS150/12		BR1015		TVA-1406	Stabilizing Cap.
C9	220		8G-16045	SI220	D6-221		GP2K-221	5GA-T22	RF Coupling
C10	5000		8G-13962	BPD-005	DD-502		811-005	5HK-D5	RF Amp. Cathode
C11	1000		8G-13201	SI1000	D6-102		GP2L-102	5HK-D1	RF Amp. Plate
C12	1000		8G-13201	SI1000	D6-102		GP2L-102	5HK-D1	RF Amp. Screen
C13	.68		8G-12495-1		TCZ-.68		NPOK-R68		RF Coupling
C14	15		8G-13087		TCZ-15		NPOK-150		Fixed Trimmer
C15	1000		8G-13201	SI1000	D6-102		GP2L-102	5HK-D1	Fixed Trimmer
C16	4		8G-19314				NPOK-040		Fixed Trimmer
C17	1000		8G-13201	SI1000	D6-102		GP2L-102	5HK-D1	Fixed Trimmer
C18	1.5		8G-12495-8	SI1.5NPO	TCZ-1.5		NPOK-1R5		RF Coupling
C19	2.2		8G-12495-4		TCZ-2.2		NPOK-2R2		Osc. Coupling
C20	SI		8G-11891		TCN-SI		N750K-510		Osc. Feedback
C21	2.5		8G-19568				N080-331-2R5		Fixed Trimmer
C22	7		8G-19572						Fixed Trimmer
C23	1		8G-12495-2		TCZ-1		NPOK-010		Osc. Coupling
C24	220		8G-16045	SI220	D6-221		GP2K-221	5GA-T22	Conv. Fil.
C25	1000		8G-13201	SI1000	D6-102		GP2L-102	5HK-D1	Osc. Plate Dec.
C26	5000		8G-13962	BPD-005	DD-502		811-005	5HK-D5	Mixer Plate Dec.
C27	5000		8G-13962	BPD-005	DD-502		811-005	5HK-D5	RF Bypass
C28	1000	500	8F3-8	1468-0001	D6-101		GP1K-101	1FM-31	IF Coupling
C29	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C30	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st Video IF Dec.
C31	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	1st Video IF Fil.
C32	47	500	8F3-109	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	IF Coupling
C33	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C34	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	2nd Video IF Dec.
C35	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	2nd Video IF Fil.
C36	47	500	8F3-109	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	IF Coupling
C37	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C38	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C39	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	3rd Video IF Dec. †
C40	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	3rd Video IF Fil. *
C41	47	500	8F3-109	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	IF Coupling
C42	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	4th Video IF Plate
C43	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	4th Video IF Screen
C44	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	4th Video IF Cathode
C45	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	4th Video IF Fil. *
C46	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C47	1000		8G-13201	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Video Det. Fil.
C48	5		8G-12216	SI5NPO	TCZ-4.7		NPOK-050		Video Det. Filter
C49	100	500	8F1-113	1469-0001		5R5T1		MS-31	Fixed Trimmer
C50	100	500	8F1-113	1469-0001		5R5T1		MS-31	Peaking Cap.
C51	.01	400	8D-17270	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Video Coupling
C52	22		8G-11892		TCN-22			5TCV-Q22	Video Amp. Cathode
C53	.1	500	8D-18961	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C54	3.3			SI3.3NPO	TCZ-3.3		NPOK-3R3		Sound IF Coupling
C55	.002	600	8D-15638	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Sound IF Decoupling
C56	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Sound IF Cathode
C57	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C58	820	500	8F3-124						Diode Load Cap.
C59	2000		8G-19532	SI2000	D6-202	1W5D2	GP2-333-202	5HK-D2	De-Emphasis
C60	.01	200	8D-17258	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C61	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C62	.01	200	8D-17258	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C63	.1	400	8D-17990	P488-1	DF-104	PTE4P1		4TM-P1	AF Amp. Screen
C64	.01	200	8D-17258	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C65	.01	400	8D-17270	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C66	.005	600	8D-19258	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C67	470	500	8F3-121	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Sync. Coupling
C68	.1	200	8D-17259	P288-1	DF-104	PTE4P1		2TM-P1	Sync. Coupling
C69	.01	400	8D-17270	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Sync. Amp. Plate
C70	.005	400	8D-17606	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Vert. Sync. Coupling
C71	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	Vert. Integrator Net.
C72	.05	400	8D-14461	P488-05	DF-503	PTE4S5		4TM-S5	Vert. Discharge
C73	.25	600	8D-17784	684-25		GP6P25		6TM-P25	Vert. Sweep Coupling
C74	.05	400	8D-14461	P488-05	DF-503	PTE4S5		4TM-S5	Vert. Sweep Coupling
C75	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	Integrator Net.
C76	.1	400	8D-18861	P488-1	DF-104	PTE4P1		4TM-P1	Vert. Sweep Coupling
C77	470	500	8F3-121	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Horiz. Sync. Coupling
C78	680	500	8F3-123	1479-0007	D6-681	2R5T7	GP2K-681	MS-37	Voltage Divider
C79	220	500	8F3-117	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Horiz. Feedback
C80	680	500	8F3-123	1479-0007	D6-681	2R5T7	GP2K-681	MS-37	Voltage Divider
C81	220	500	8F3-117	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Horiz. Feedback
C82	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	AFC Filter
C83	2000		8G-16049	SI2000	D6-202	1W5D2	GP2-333-202	5HK-D2	AFC Filter
C84	3900	500	8F11-133	1464-004		1DR5D4			Fixed Trimmer
C85	5000		8G-13962	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass
C86	220	500	8F3-117	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Horiz. MV Feedback
C87	330	500		1468-00035	D6-331		GP2K-331	1FM-335	Horiz. Discharge †
C88	.001	600	8D-19193	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sweep Coupling
C89	47		8G-19198	SI47	D6-470	5W5Q5	GP1K-470	5GA-Q47	Horiz. Feedback
C90	820	500	8F3-124						Voltage Divider ¶
C91	.1	600	8D-18861	P688-1	DF-104	PTE6P1		6TM-P1	Horiz. Output Screen
C92	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	Fixed Trimmer
C93	150	1500	8G-19498						Fixed Trimmer
C94	.15	200	8D-15687	P288-15				2TM-P15	Horiz. Sweep Coupling *
C95	.1	200	8D-17259	P288-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C96	.047	400	8J-16081	P488-047	DF-503	PTE4S5		4TM-S47	Line Filter
C97	51		8G-11891		TCN-51		N750K-510		Conv. Cathode
C98	.02	200	8D-17268	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C99	1000		8G-13201	SI1000	D6-102	1W5D15	GP2L-102	5HK-D1	Osc. Anode
C100	.25	400	8D-17784	P488-25		GT4P25		4TM-P25	Decoupling
C101	100		⌀201-15005	SI100	♦PC-50	5W5T1	GP1K-101	⌀100C1	Det. RF Filter
	100					5W5T1	GP1K-101		Det. RF Filter

* Not used in all models.
† Some models use 1000 MMF in this application.
‡ Some models use 750 MMF in this application.
¶ Some models use 470 MMF in this application.
♦ Items C101A, C101B, R105 are combined into one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	5000Ω	½	A-10A-18441		RTV-218	SBBT-617-S	Contrast Control-Front
B	1Meg	½					Volume Control and SW-Tapped ⓐ 100kΩ-Rear
R2A	50kΩ	½	A-10B-17764	QII-123	AG-44-S	AN-31	Brightness Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A Per Instructions
R3A	1Meg	½	A-10B-19542	QI3-137	AG-63-Z	B5K-70	Tone Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R3A Per Instructions
R4A	100kΩ	½	A-10B-17275	QII-128	AG-49-S	AN-40	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R4A Per Instructions
R5A	500kΩ	½	A-10B-19218	QII-114	AG-19-S	AN-10	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6A	750kΩ	½	A-10B-19220		AG-61-S	AN-69	Vert. Size Control
B	Shaft		Not Req.		FKS-1/4	AK-1	Attach to R6A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
R7	470kΩ 20%	½		BTS-750K	Antenna Isolation
R8	68Ω 20%	½	9B1-80	BTS-680	Antenna Isolation
R9	10kΩ	½	9B1-74	BTS-10K	RF Amp. Grid
R10	68Ω 20%	½	9B1-48		RF Amp. Cathode
R11	1000Ω 20%	½	9B1-13	BTS-1000	RF Amp. Screen
R12	5600Ω	½	9B1-71		Mixer Grid Coil Shunt
R13	68kΩ	½	9B1-84	BTS-68K	Mixer Grid
R14	1200Ω	½	9B1-63	BTS-1200	Mixer Cathode
R15	10kΩ	½	9B1-74	BTS-10K	Osc. Grid
R16	8200Ω	1	9B2-73	BTA-8200	Osc. Plate
R17	10Ω	½	9B1-38		Parasitic Suppressor
R18	10Ω	½	9B1-38		Parasitic Suppressor
R19	1000Ω	½	9B1-13	BTS-1000	Decoupling-See Note 2
R20	33kΩ	½	9B1-80	BTS-33K	AGC Network
R21	68kΩ	½	9B1-84	BTS-68K	AGC Network
R22	2200Ω	½	9B1-66	BTS-2200	AGC Network
R23	1000Ω	½	9B1-13	BTS-1000	AGC Network-See Note 2
R24	8200Ω	½	9B1-73	BTS-8200	1st Video IF Amp. Grid
R25	82Ω	½	9B1-49	BTS-82	1st Video IF Amp. Cathode
R26	1000Ω	½	9B1-13	BTS-1000	1st Video IF Amp. Decoupling-See Note 2
R27	1000Ω	½	9B1-13	BTS-1000	AGC Network-See Note 2
R28	6800Ω 20%	½	9B1-72	BTS-6800	2nd Video IF Amp. Grid
R29	82Ω	½	9B1-49	BTS-82	2nd Video IF Amp. Cathode
R30	1000Ω	½	9B1-13	BTS-1000	2nd Video IF Amp. Decoupling-See Note 2
R31	1000Ω	½	9B1-13	BTS-1000	AGC Network-See Note 2
R32	6800Ω 20%	½	9B1-72	BTS-6800	3rd Video IF Amp. Grid
R33	82Ω	½	9B1-49	BTS-82	3rd Video IF Amp. Cathode
R34	1000Ω	½	9B1-13	BTS-1000	3rd Video IF Amp. Decoupling-See Note 2
R35	6800Ω	½	9B1-72	BTS-6800	4th Video IF Transformer Shunt
R36	120Ω	½	9B1-51	BTS-120	4th Video IF Amp. Cathode
R37	68kΩ	1	9B2-84	BTA-68K	4th Video IF Amp. Screen
R38	5600Ω	½	9B1-71	BTS-5600	4th Video IF Amp. Plate Decoupling
R39	12kΩ	½	9B1-75	BTS-2K	5th Video IF Transformer Shunt-See Note 3
R40	10kΩ	½	9B1-74	BTS-10K	Keyed AGC Grid
R41	1000Ω	½	9B1-13	BTS-1000	Decoupling
R42	3900Ω	½	9B1-69	BTS-3900	Video Det. Diode Load
R43	2200Ω	½	9B1-66	BTS-2200	Video Amp. Plate
R44	1250Ω	½		BTS-1200	Video Amp. Plate-See Note 4

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
R45	47kΩ	2	9B4-82	BTB-47K	Voltage Divider
R46	4700Ω	1	9B2-70	BTA-4700	Decoupling
R47	1.6Meg	½		BTS-1.5Meg	Video Amp. Grid-See Note 6
R48	100Ω	½	9B1-50	BTS-100	Video Amp. Cathode
R49	4700Ω	2	9B4-70	BTB-4700	Video Amp. Plate
R50	39kΩ 20%	½		BTS-39K	Video Peaking Coil Shunt-See Note 5
R51A	15000Ω	10	9M-19995		Voltage Divider-Wire Wound } Note 10
B	1200Ω	10			Voltage Divider-Wire Wound }
R52	1Meg	½	9B1-98	BTS-1Meg	DC Restorer Diode Load
R53	100kΩ 20%	1		BTA-100K	Voltage Divider-See Note 7
R54	22kΩ	½	9B1-78	BTS-22K	Picture Tube Grid
R55	82kΩ	½		BTS-82K	Picture Tube Cathode-See Note 8
R56	1000Ω	½	9B1-62	BTS-1000	ACC Anode Load
R57	120Ω	½	9B1-51	BTS-120	Sound IF Amp. Cathode
R58	2200Ω	½	9B1-66	BTS-2200	Sound IF Amp. Decoupling
R59	22kΩ	½	9B1-78	BTS-22K	Ratio Det. Diode Load
R60	22kΩ	½	9B1-78	BTS-22K	De-Emphasis
R61	39kΩ 20%	½		BTS-39K	Tone Compensation-See Note 5
R62	10Meg	½	9B1-37	BTS-10Meg	AF Amp. Grid
R63	1.8Meg	½	9B1-101	BTS-1.8Meg	AF Amp. Screen
R64	470kΩ	½	9B1-29	BTS-470K	AF Amp. Plate
R65	470kΩ	½	9B1-29	BTS-470K	Output Grid
R66	820Ω	1	9B2-61	BTA-820	Output Cathode
R67	1000Ω	2	9B4-62	BW-2-1000	Decoupling-Wire Wound
R68	4.7Meg	½	9B1-106	BTS-4.7Meg	Sync. Sep. Grid
R69	68kΩ	½	9B1-84	BTS-68K	Sync. Sep. Plate
R70	6800Ω	2	9B1-72	BTS-6800	Voltage Divider
R71	2.2Meg	½	9B1-102	BTS-2.2Meg	Vert. Sync. Amp. Grid
R72	47kΩ	2	9B4-82	BTB-47K	Vert. Sync. Amp. Plate
R73	47kΩ	1	9B2-82	BTA-47K	Integrator
R74	1.5Meg	½	9B1-100	BTS-1.5Meg	Vert. Osc. Grid
R75	220kΩ	½	9B1-90	BTS-220K	Vert. Osc. Plate
R76	220kΩ	½	9B1-90	BTS-220K	Vert. Osc. Decoupling
R77	39kΩ	½		BTS-39K	Voltage Divider-See Note 5
R78	470kΩ	½	9B1-29	BTS-470K	Voltage Divider
R79	1Meg	½	9B1-98	BTS-1Meg	Vert. Amp. Grid
R80	1000Ω	1	9B2-62	BTA-1000	Vert. Amp. Cathode
R81	3300Ω	½	9B1-88	BTS-3300	Vert. Peaking
R82	15kΩ	½	9B1-76	BTS-15K	Vert. Retrace Blanking Network
R83	1000Ω	1	9B1-62	BTA-1000	Vert. Retrace Blanking Network
R84	1Meg	½	9B1-98	BTS-1Meg	Horiz. Feedback
R85	680kΩ	½	9B1-96	BTS-680K	Horiz. Feedback
R86	150kΩ	½	9B1-88	BTS-150K	Horiz. Phase Disc Diode Load
R87	150kΩ	½	9B1-88	BTS-150K	Horiz. Phase Disc Diode Load
R88	2.2Meg	½	9B1-90	BTS-2.2Meg	Horiz. Phase Disc Diode Load
R89	2.2Meg	½	9B1-90	BTS-2.2Meg	Horiz. Phase Disc Diode Load
R90	68kΩ	½	9B1-84	BTS-68K	Horiz. AFC Filter
R91	1500Ω	½	9B1-64	BTS-1500	Horiz. MV Cathode
R92	5600Ω	1	9B2-71	BTA-5600	Horiz. MV Plate
R93	120kΩ	½	9B1-87	BTS-120K	Horiz. MV Grid
R94	270kΩ	½	9B1-91	BTS-270K	Horiz. MV Plate
R95	220Ω	½	9B1-54		Parasitic Suppressor
R96	1Meg	½	9B1-98	BTS-1Meg	Horiz. Output Grid
R97	4700Ω	1	9B2-70	BTA-4700	Horiz. Output Screen
R98	3800Ω	5	9C12-2061	1 3/4A-3500	Decoupling-Wire Wound
R99	10Ω				Damping-See Note 1
R100	2.2Ω	½	9C1-1067		HV Rectifier Filament-See Note 9
R101	12kΩ	10	9C-20019	1 3/4A-12K	Decoupling
R102	470kΩ	½	9B1-94	BTS-470K	Isolation
R103	47kΩ	½	9B1-82	BTS-47K	AM Osc. Grid
R104	180Ω	½	9B1-53	BTS-180	AM IF Amp. Cathode
R105	2.2Meg	½	9B1-33	BTS-2.2Meg	AVC Network
R106	47kΩ	½	20I-15005 ♦	BTS-47K	Diode Filter
R107	1000Ω	½	9B1-62	BTS-1000	Decoupling-See Note 1

♦ Items R106, C101A, and C101B are combined into one unit.
Note 1 Not used in all models.
Note 2 Some models use 2.2 Microhenries RF Choke in this application.
Note 3 Some models use series resistors in this application to obtain desired value.
Note 4 Some models use 1000Ω resistor in this application.
Note 5 Some models use 47kΩ resistor in this application.
Note 6 Some models use 2.2Meg resistor in this application.
Note 7 Some models use 68kΩ resistor in this application.
Note 8 Some models use 100kΩ resistor in this application.
Note 9 Some models use choke in place of resistor.
Note 10 Some models use single units in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓐ 1.9A	640VCT .250ADC	5VAC ⓐ 3A	6.3VAC ⓐ 1.5A SEC. 4 6.3VAC ⓐ 7.2A	12A-18839 or 12A-18839-1		P-3059	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	200Ω	1100Ω	B12M-18241	A-8111 ②	A-3000 ②	TBO-1 ②	Vert Block Osc. Trans.
T3	210Ω	8.5Ω	20I-19817 or				Horiz. Output Trans.
	Tap 30Ω	Tap .5Ω	20I-19817-1				
		SEC. 2					
		21Ω					
		Tap 10Ω					
		SEC. 3					
		0Ω					
T4	700Ω		12C-19048	A-8112 ②	A-3037	TSO-5 ②	Vert. Output Trans.
T5A	Tap 8.5Ω 15.5Ω		20I-19490	DY-7	MDF-70		Horiz. Deflection Coils.
B	65Ω						Vert. Deflection Coils.

② Drill one new mounting hole.

AIRLINE MODEL 15BR-3035A

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T6	4.8KΩ	3.5Ω	415Ω	.5Ω	12C1 8743-1	A-3823 ②	A-3019	RO-9 ②	② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRLINE PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.5Ω	18A18865	10J12	10A4A	
	CONE DIA.	V. C. DIA.				
SP2	9 3/8	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↩)	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.250A	38Ω	1.3 Henry	16A-17959	C-2326 ②	C-2991 ②	TR-3300 ②	② Drill one new mounting hole.
L2	.250A	38Ω	1.3 Henry					

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	IRC PART No.	
L3	Ant. Coil	0Ω	0Ω	201-17143		Hi-Band (Part of L4) Includes 2 Trimmers (5-20MMF) and R7(470KΩ)
L4	Ant. Coil	0Ω	0Ω	201-17143		Lo-Band (Part of L3)
L5	RF Choke	.8Ω		16A-17128		
L6	RF Coil Primary	.1Ω		13E-17140		Hi-Band
L7	RF Coil Secondary	.1Ω		13E-17140		Hi-Band
L8	Osc. Coil	.1Ω		13E-17140		Hi-Band
L9	RF Coil Primary	.1Ω		13E-12046		Lo-Band
L10	RF Coil Secondary	.1Ω		13E-12046		Lo-Band
L11	Osc. Coil	.1Ω		13D-12155		Lo-Band
L12	RF Choke	11Ω		16A-18025		
L13	1st Video IF	.3Ω		13M-19521		
L14	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R19)
L15	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R23)
L16	Fil. Choke	.1Ω		201-15609		
L17	2nd Video IF	.2Ω		201-15612		
L18	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R26)
L19	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R27)
L20	3rd Video IF	.2Ω		201-15612		
L21	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R30)
L22	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R31)
L23	4th Video IF	.2Ω		201-15612		
L24	RF Choke	1.8Ω		16A-18676	CLA	2.2 Microhenries (In lieu of R34)
L25	RF Choke	2.4Ω		201-15608		
L26	5th Video IF	.8Ω	.8Ω	13B-19958		
L27	Fil. Choke	.2Ω		16A-17937		
L28	Peaking	.8Ω				63 Microhenries
L29	4.5MC Trap	1.6Ω				
L30	Peaking	26Ω		16A-19365		410 Microhenries
L31	Peaking	7.5Ω		16A-19485		240 Microhenries
L32	Peaking	10Ω		16A-19486		380 Microhenries
L33	Sound IF	2.8Ω		13A-19514		
L34	Ratio Det. Trans.	4Ω	.9Ω	13M-19257		Tap .9Ω
L35	Horiz. Osc.	80Ω		13D-19540		
L36	Horiz. Size	.3Ω		13M-18233		
L37	Horiz. Lin.	5.5Ω	Tap 3.8Ω	13M-19499		
L38	Fil. Choke	1Ω		16A-19818		Some models use 2.2Ω resistor (R100)
L39	AM Loop Ant.	2.5Ω		13E-19823		
L40	AM Osc. Coil	.9Ω	6Ω	13D-19663		
L41	1st AM IF	16Ω	16Ω	13B-17731		
L42	2nd AM IF	16Ω	16Ω	13B-17731		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			AIRLINE PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	.250A	46B-18362	55F-18024	312.250	357001	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA						REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE
M2		AC-AG-J	A-AG	W26B	A66U	33	0-2 or S-2

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL NEEDLE REPLACEMENTS SEE BELOW.

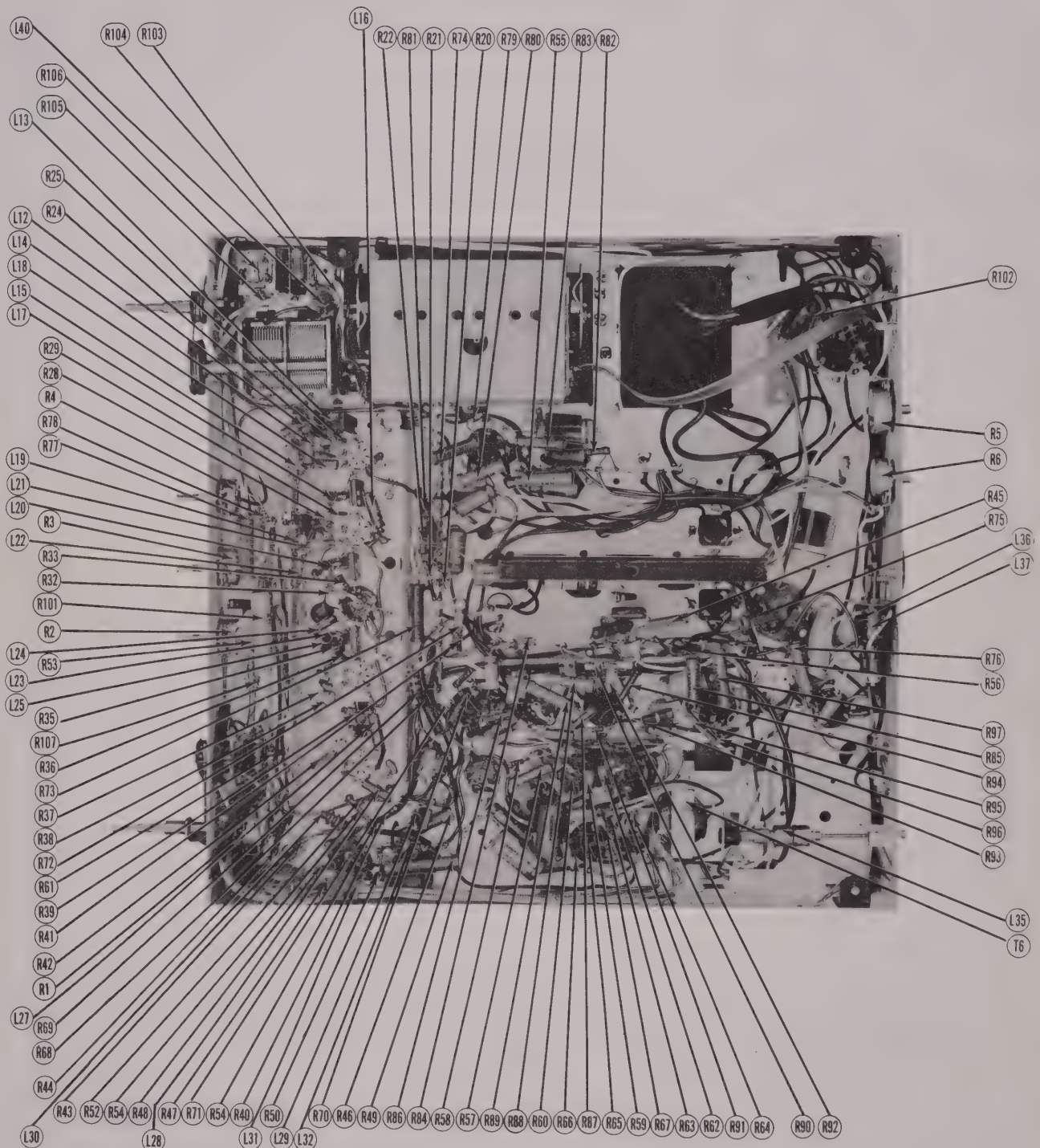
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	AIRLINE PART No.	WALCO PART No.	
M3		W-30AGA	

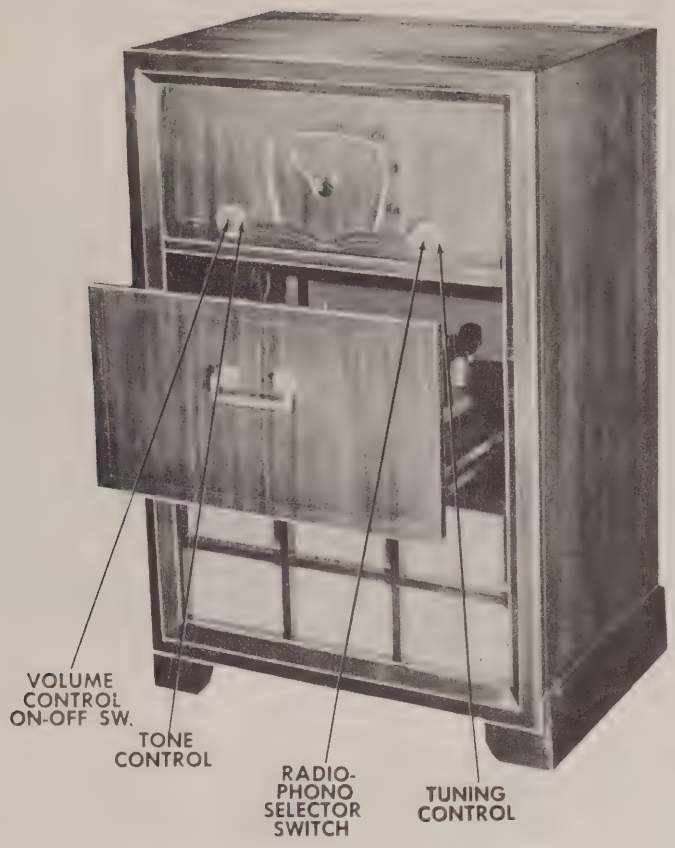
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	RF Tuner		
M5	Crystal	CK-706	AM Tuner Detector
M6	Switch	20A-19642	Band (TV-AM-Phono)
M7	Focus Magnet	55P-19600-1	
M8	Ion Trap	16M-19906	
M9	Tuning Cap	8A-19655	(17-477 MMF, 28-162MMF)
B2	Trimmer	8E-18508	Horiz. Drive
A23	Trimmer	8E-19838	AM Ant.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

ARVIN
MODELS 554CCB, CCM (Ch. RE-306)



ARVIN
MODELS 554CCB, CCM (Ch. RE-306)

ARVIN MODEL 554CCM

TRADE NAME	Arvin Models 554CCB, 554CCM (Ch. RE-306)
MANUFACTURER	Arvin Industries, Columbus, Indiana.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 6BE6 Conv., 6BA6 IF Amp., 6AV6 Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .67 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set Pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to stator on rear section of tuning gang. Low side to B -.	455KC (400~Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune for max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FOR SERVICE INFORMATION ON RECORD CHANGER UNIT SEE PHOTOFACT FOLDER #13 SET #107.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

ARVIN MODEL 554CCM

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	6BE6	6BE6	7CH	
V2	IF Amplifier	6BA6	6BA6	7BK	
V3	Det.-AVC-AF Amp.	6AV6	6AV6	7BT	
V4	Power Output	6V6GT	6V6GT	7AC	
V5	Rectifier	5Y3GT	5Y3 GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	450	C24415	PRS450/20-20		EDL22245C		TVL-3780	Filter (Red)
B	20	450							Filter (Blue)
C	20	450		PRS450/20					Decoupling (Green)
C2	10	25	A22602	PRS25/10		BR102A		TVA-1204	Power Output Cathode
C3	.05	200	C20067-503	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C4	.05	400	C20068-503	P488-05	DF-503	PTE4S5		4TM-S5	Osc. Anode
C5	.05	400	C20068-503	P488-05	DF-503	PTE4S5		4TM-S5	Conv. Plate Dec.
C6	.05	400	C20068-503	P488-05	DF-503	PTE4S5		4TM-S5	IF Amp. Plate Dec.
C7	.05	400	C20068-503	P488-05	DF-503	PTE4S5		4TM-S5	IF Amp. Screen Bypass
C8	100	500	C20065-101	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode RF Filter
C9	100	500	C20065-101	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Diode RF Filter
C10	.005	200	C20067-502	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C11	.01	400	C20068-103	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C12	250	500	C20065-251	1468-00025	D6-251	5W5T25	GP2K-251	1FM-325	AF Amp. Plate
C13	.005	200	C20067-502	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C14	.01	600	D20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C15	.005	400	C20069-302	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Power Output Plate
C16	.01	600	D20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C17	.01	600	D20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter

CONTROLS

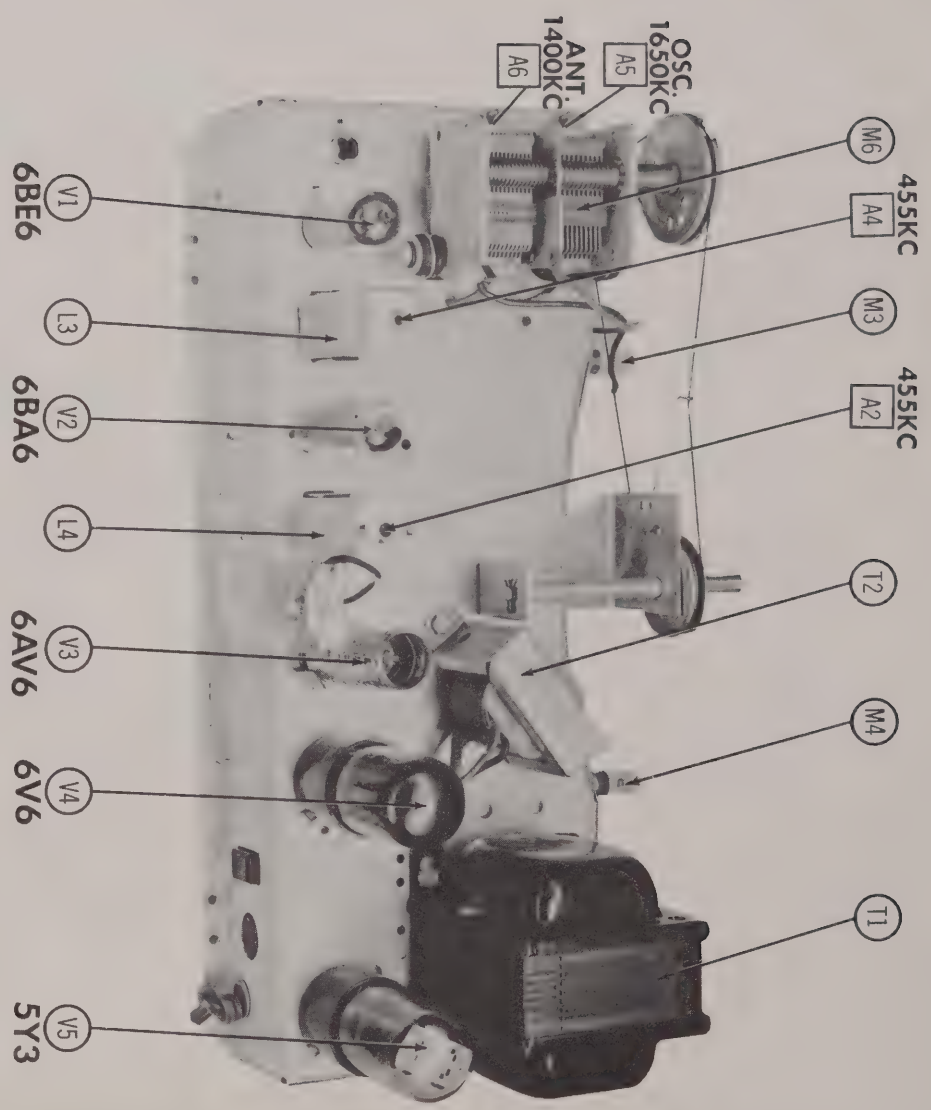
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500K Ω	½	C24535	Concentrikit B11-133 *	RTV-295		Tone Control - Panel
B	500KΩ	½		B13-133X *			Volume Control & Switch - Rear
C	Shaft end			E-187 *			Attach per instructions in "Concentrikit"
D	Switch			76-1 *			Attach per instructions in "Concentrikit"

* Additional parts to be used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	1/4	C20060-223	BTS-22K	Oscillator Grid
R3	22KΩ	2	C20302-223	BTB-22K	ConverterAnode
R4	3300Ω	1/4	C20060-332	BTS-3300	Converter Plate Decoupling
R5	2.2Meg	1/4	C20060-225	BTS-2.2Meg	AVC Network
R6	68Ω	1/4	C20060-680	BW-½-68	IF Cathode
R7	47KΩ	1	C20070-473	BTA-47K	IF Screen
R8	47KΩ	1/4	C20060-473	BTS-47K	Diode RF Filter
R9	47KΩ	1/4	C20060-473	BTS-47K	Tone Compensation
R10	6.8Meg	1/4	C20060-685	BTS-6.8Meg	AF Amplifier Grid
R11	470KΩ	1/4	C20060-474	BTS-470K	AF Amplifier Plate Load
R12	470KΩ	1/4	C20060-474	BTS-470K	Output Grid
R13	270Ω	1	A24891	BTA-270	Output Cathode - Wire Wound
R14	820Ω	1	C20070-821	BTA-820	Filter
R15	750Ω	5	C23970-14	1 3/4A-750	Filter - Wire Wound
R16	2Ω	½	A24761	BW-½-2.2	Series Pilot Light - Wire Wound

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @.67A	600VCT @.075A	5.0VAC @2.0A	6.3VAC @2.0A	D24440		P-2951 ①	PV-70A ①

① Drill New Mounting Holes

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4.5KΩ	3.4Ω	300Ω	.4Ω	C24776-1	A3877 ②	A-3019	RO-9②	② Drill One New Mounting Hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V.C.IMP.	ARVIN PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.4Ω	AC24763-1	ST-115 Mod. P8-V	8A21	
	CONE DIA.	V.C.IMP.				
SP2	7 7/8"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	ARVIN PART No.	MERIT PART No.	IRC PART No.	
L1	Loop Ant.	.1 Ω	1.4Ω	D24777			
L2	Osc. Coil	.6Ω	7Ω	AC24482-1			
L3	Input IF	23Ω	22Ω	C21797-16			
L4	Output IF	12Ω	12Ω	C21797-19			

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	ARVIN PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LT-4-AG	D-AG	W66B	A66U	73	0-2 or S-2	

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	ARVIN PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-20AGA or W-21AGS	E-962 or E-902	

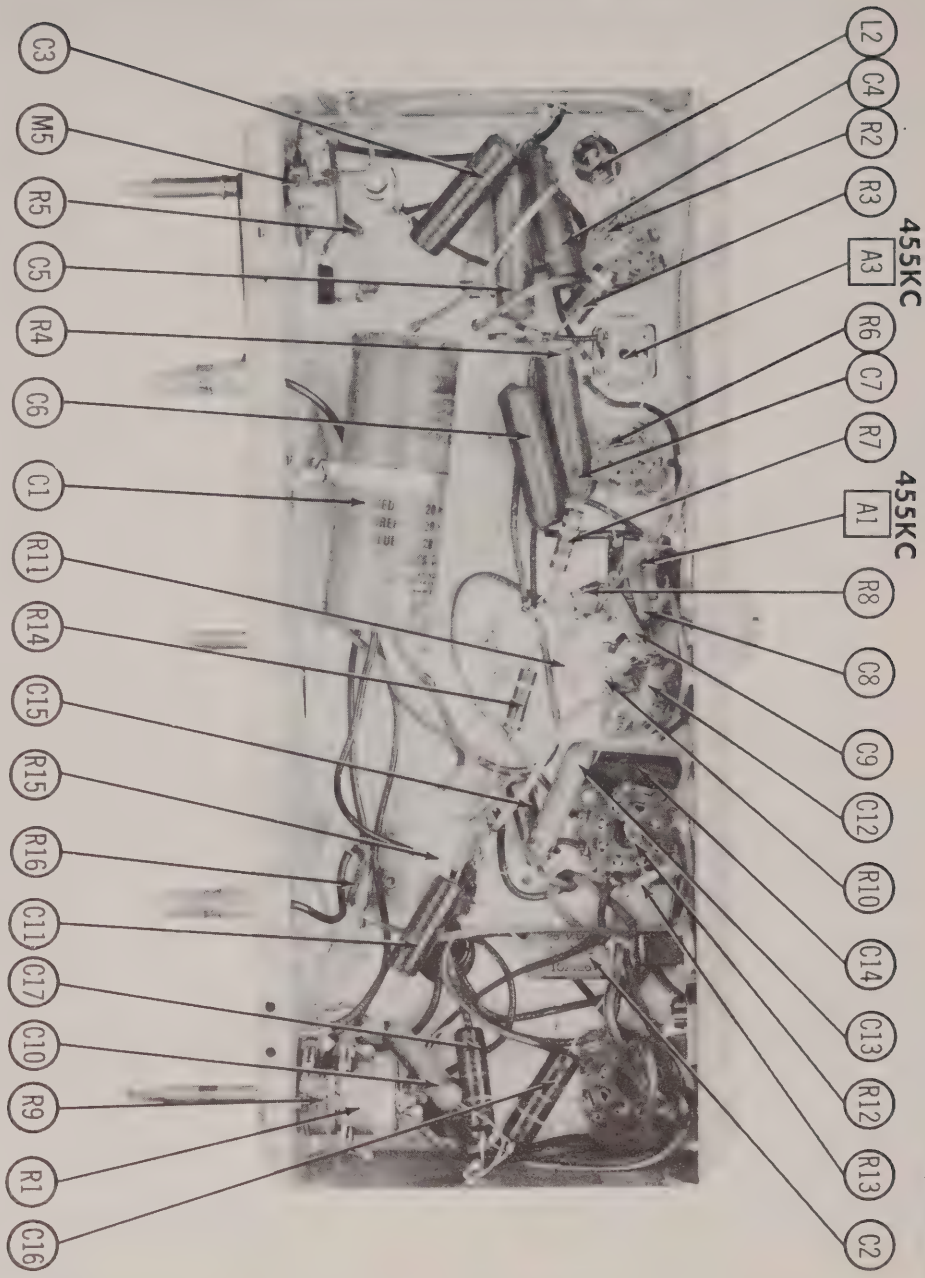
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ARVIN PART No.		
M3	Bayonet	6-8	.15	Brown	A19351		Type Number 47
M4	Bayonet	6-8	.15	Brown	A19351		Type Number 47

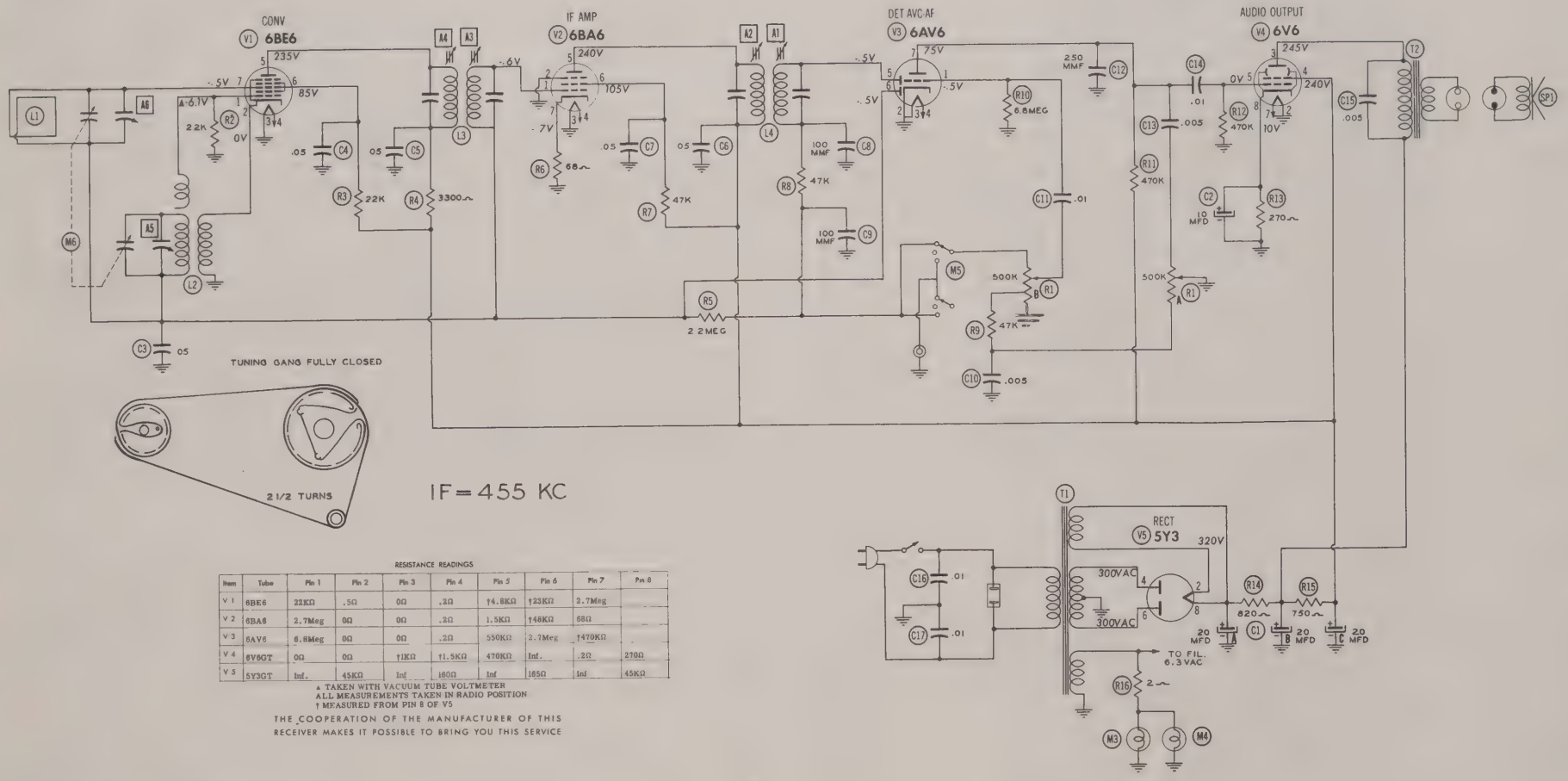
MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M5	Switch	C24438	Radio - Phono
M6	2 Gang Var. Cap.	C24305	(18-500MMF, 17-220MMF)
	Pointer	C24449	
	Dial Crystal	E24447	
	Cabinet	R24720-3	Mahogany
	Cabinet	R24720-4	Blonde
	Knob	A24442-1	Volume, Radio - Phono
	Knob	A24443-1	Tone, Tuning

CHASSIS—BOTTOM VIEW



ARVIN MODEL 554CCM



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BE6	22KΩ	.5Ω	0Ω	.2Ω	†4.8KΩ	†23KΩ	2.7Meg	
V 2	6BA6	2.7Meg	0Ω	0Ω	.2Ω	1.5KΩ	†48KΩ	68Ω	
V 3	6AV6	6.8Meg	0Ω	0Ω	.2Ω	550KΩ	2.7Meg	†470KΩ	
V 4	6V6GT	0Ω	0Ω	†1KΩ	†1.5KΩ	470KΩ	Inf.	.2Ω	270Ω
V 5	5Y3GT	Inf.	45KΩ	Inf.	160Ω	Inf	185Ω	Inf	45KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
ALL MEASUREMENTS TAKEN IN RADIO POSITION
† MEASURED FROM PIN 8 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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155-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

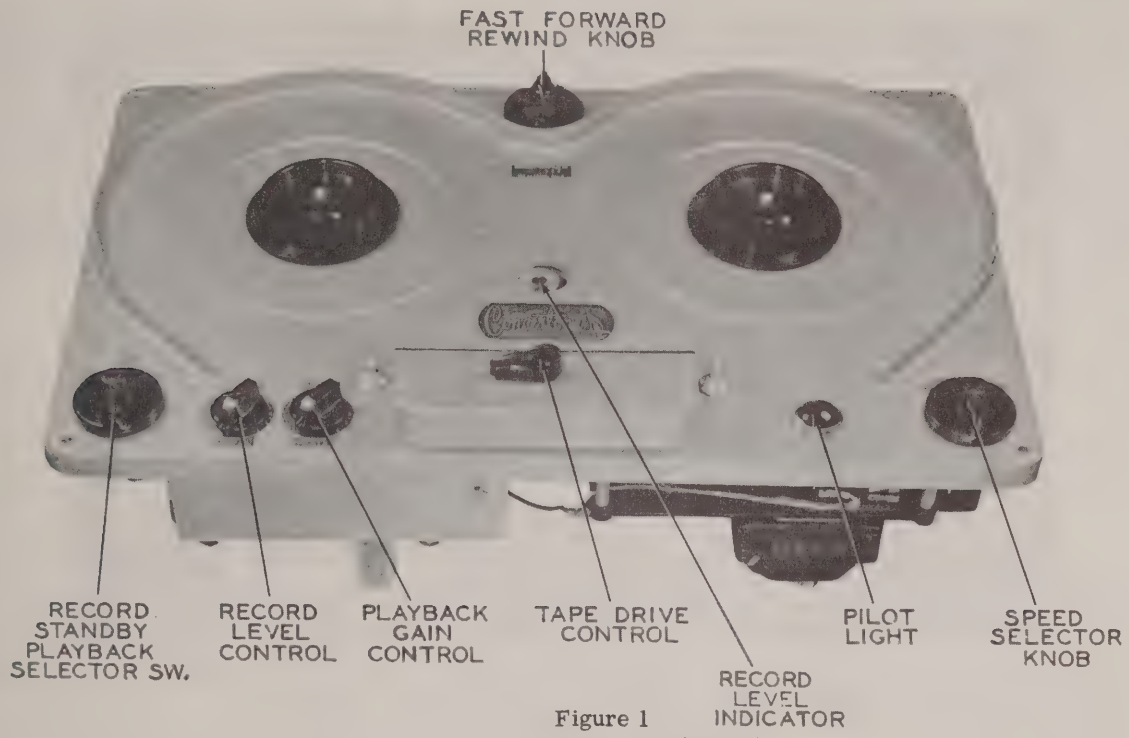

Figure 1

GENERAL INFORMATION

The Concertone Model 1401 Magnetic Tape Recorder consists of a cast-aluminum plate on which are mounted the drive mechanism, power supply, and amplifier chassis. The mechanism is designed to record on standard 5" and 7" reels, or the professional NAB 10-1/2" reel using the #801 reel adaptor, at the speed of 7-1/2" or 15" per second.

Three separate heads for high frequency - Erase, Record, and Play-back are used. The mechanism incorporates three dynamically balanced motors: Fast-Forward or Takeup, Rewind, and the Capstan Drive Motor.

All controls are mounted on the base plate and are shown on the above photograph. The Fast-Forward and Rewind require 60 seconds to wind 2500 feet of tape - NAB 10-1/2" reel.

Playing Time: 7" reel; 16 min. at 15" per sec.
32 min. at 7.5" per sec.
10-1/2" reel; 33 min. at 15" per sec.
66 min. at 7.5" per sec.

Frequency Response: ± 2db from 50 to 15,000 cycles at 15" per sec.
± 3db from 50 to 8,500 cycles at 7.5" per sec.

Input and Output Impedance: 0.5 megohm.

Minimum Input Signal: 5 M. V.

Output Signal: Audio - 1 Volt.

Power Requirement: 250 Watts, 117 Volts, 60 Cycles A. C.

Manufactured by: Berlant Associates
4917 W. Jefferson Blvd., Los Angeles 16, Calif.

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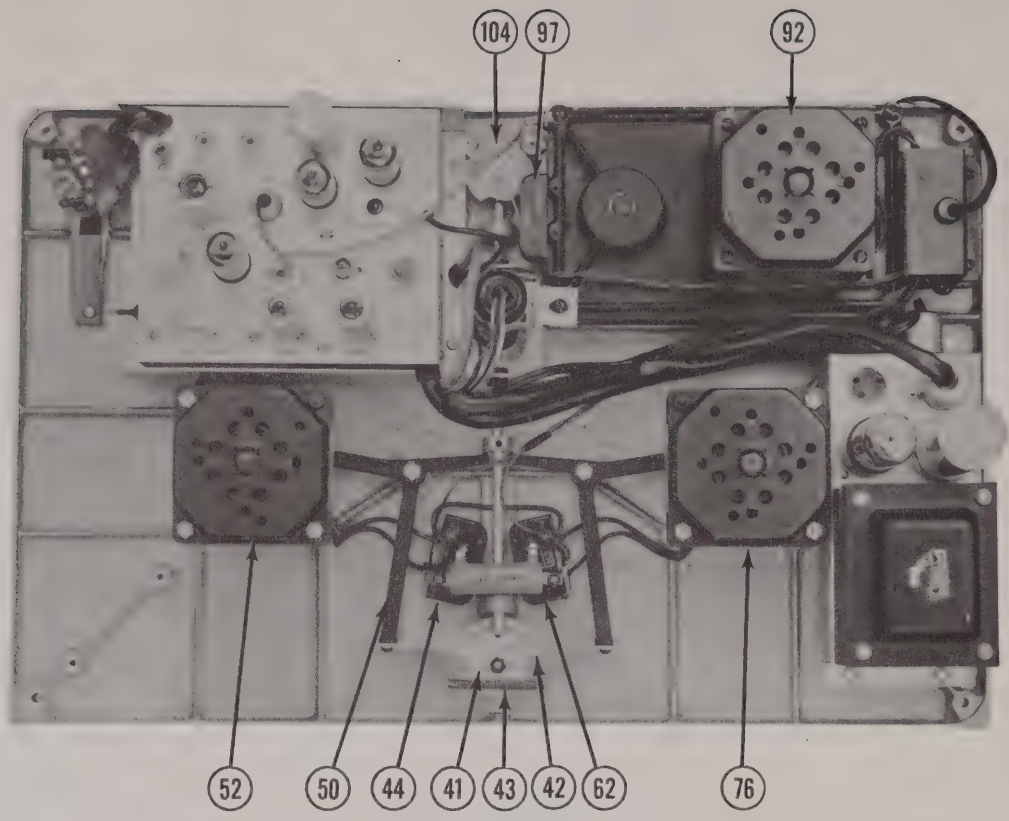


Figure 2

OPERATION

To Prepare the Concertone for Recording -

1. Set all of the controls on the baseplate to the following positions:

(a) "Record-Playback" control knob to "Standby".

(b) "Record-Level" and "Playback-Gain" controls to full counterclockwise position.

(c) "Tape-Drive" control knob should point toward the left side of unit. This retracts the pressure pads and pinch roller so that the recording tape can be lowered to its proper position.

(d) "Speed-Selection" knob should be turned to the "Off" position.

(e) "Fast-Forward and Rewind" knob should point toward the front of the machine (see Figure 1.)

2. An Audio Amplifier must be used in conjunction with the Concertone 401 and is connected as follows:

(a) A shielded lead from the jack, marked "Output" of the Concertone (see Figure 2) is connected to the input of the audio amplifier of the sound system with which the recorder is being used.

3. Insert the plug of the sound source, such as a radio tuner, phonograph, or microphone, into the jack marked "High Input".

4. Insert the line cord plug into a convenient receptacle of the proper rating - 117 Volts, 60 Cycles AC.

5. There are two types of reels used in magnetic recording: The RMA Standard 7" reel (1250 feet of tape) and the NAB Standard 10-1/2" reel (2400 feet of tape.)

(a) The standard 7" reels fit directly on the supply and takeup reels.

(b) The standard 10-1/2" reels require the use of the Concertone NAB Reel Adaptor #801 to fit the spindles.

6. Place the full reel of tape on the left-hand spindle, making sure the tape unwinds counterclockwise from the reel.

7. Place an empty reel of tape on the right-hand reel.

8. Pull about 2 feet of recording tape from the supply reel; then place the tape in the slot between the trim covers. Be sure the tape is in front of the left and right guide posts (14.)

9. Insert the free end of the recording tape in a slot of the takeup reel; then turn the takeup reel counterclockwise several times. Take up all slack in the tape.

Making a Recording -

After the unit has been prepared for recording, the following procedure is necessary to make a recording:

1. Turn the speed-selector knob (10) to the desired tape speed; wait approximately thirty seconds

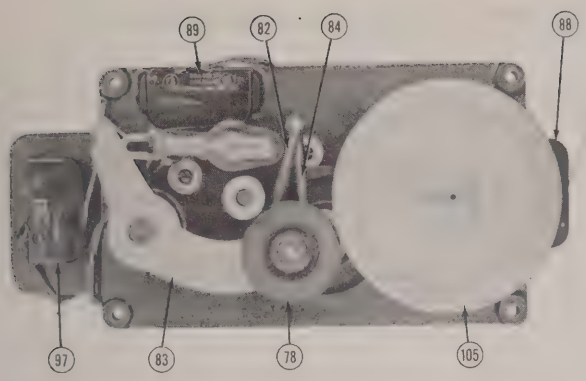


Figure 3

for the tubes to warm up.

2. Depress the safety release button (29), and, at the same time, turn the "Record-Playback" control knob to the "Record" position.

This causes the Cathode-Eye tube in the center of the rear trim cover to light up with a green glow.

3. Turn the "Record-Level" control knob clockwise until the incoming signal causes the eye to close completely on peak signals.

CAUTION: If the eye overlaps during peak signals, the recording will be distorted. If the eye does not close on peak signals, the recording will be weak and the playback will be noisy.

4. Turn the "Tape-Drive" control knob counterclockwise as far as it will go. A recording is now being made on the tape.

5. In case a Concertone Monitoring Amplifier #603 is used in conjunction with the basic Concertone #401 recorder, you may listen, directly from the tape, to what is being recorded, by turning the "Playback-Gain" control clockwise to a satisfactory level.

To Stop Recording -

1. To stop recording, turn the "Tape-Drive" control knob clockwise as far as it will go.

2. Turn the "Record-Playback" knob to "Standby." This allows the record safety button to raise, thereby preventing the knob from being turned to the "Record" position.

Rewind or Fast-Forward -

1. Turn the "Level" and "Gain" control knobs to "0".

2. The "Record-Playback" knob should be set at "Standby."

3. The "Tape-Drive" knob must be turned fully clockwise before the Fast-Forward and Rewind knob (1) can be turned.

4. The "Speed-Selector" knob (10) should be turned to the speed to which the recording is to be played. It is not necessary to have this knob set at the correct speed but saves the operator from resetting the knob when making or playing back a recording.

5. To rewind the tape, turn the "Fast-Forward and Rewind" knob (1) so that it will point to the left of the machine. The recorder will now rewind at a high rate of speed. To stop the rewind operation, turn the knob (1) so that it will point toward the front of the machine. Also, if the rewind process is stopped before all the tape is unwound from the right-hand spindle, it will save the necessity of rethreading the tape.

6. If a portion of a reel of tape is to be skipped, it may be done by using the Fast-Forward operation. For Fast-Forward operation, turn knob (1) so that it points to the right of the machine.

To Play a Recording -

1. Be sure the recording tape is properly threaded.

2. Turn the "Speed-Selection" knob to the speed to which the tape has been recorded.

3. Turn the "Record-Playback" selector switch (27) to "Playback."

4. Turn the "Tape-Drive" control counterclockwise as far as it will go. This starts the tape moving.

5. Turn the "Playback-Gain" control to the desired level. You are now listening to what has been recorded on the tape.

ADJUSTMENTS

Replacing Head Assemblies -

1. Remove the two Phillips head screws (2) that hold the rear trim cover (4) in place; then remove the cover.

2. Slip the clips from the prongs on back of the three heads, noting the order in which they are removed.

3. Loosen the two head assembly mounting screws (23) (see Figure 4).

4. Slip the whole head assembly back to clear the two screws (23) and remove the assembly.

5. To replace the head assembly, slide the head mounting casting forward under the clamping screws (23) until the casting is positioned against the dowel pins in the main plate.

NOTE: When pushing the head assembly forward, never apply pressure to the heads, but to the casting.

6. Tighten the clamping screws (23).

7. Replace the leads to their proper pins.

8. Replace the trim cover.

Balancing the Erase Oscillator -

When the head assembly is changed for another, or oscillator V6 or V7 is changed, it is advisable to rebalance the erase oscillator:

1. With a roll of tape properly threaded on the machine, turn the speed selector knob (10) to the 15"

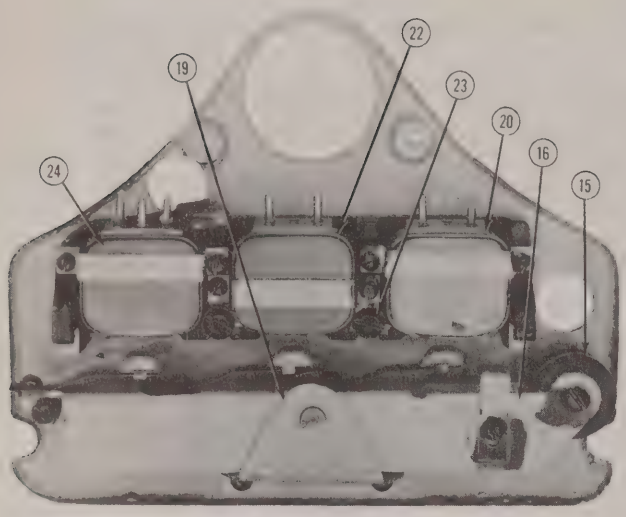


Figure 4

tape speed position.

2. Switch the "Standby-Record" Selector Switch to "Record."

3. Turn the "Record Level" control counter-clockwise as far as it will go.

4. Turn the "Tape-Drive" control counter-clockwise to put the mechanism into operation.

5. Turn the "Playback-Gain" control clockwise until the tape hiss is audible.

6. Place a piece of cardboard, about the thickness of the cover of book matches, between the tape and the record head (22) so that the tape cannot contact the record head.

7. Turn the "Erase Balance" control, shown in Figures 2 and 6, slowly back and forth until a position of minimum hiss is attained; then remove the cardboard from in front of the record head.

Adjusting Heads for Maximum Response -

The three magnetic heads are mounted by adjusting saddles in order to allow for azimuth correction. The head assemblies are prealigned and sealed at time of manufacture; consequently, they should require no further adjustment unless handling disturbs them. However, if the heads have been disturbed, they may be realigned in the following manner:

1. Remove the rear trim cover (4).

2. Remove the leads from the record head (22).

3. Transfer the two leads from the playback head (20) to the record head.

4. Thread a good lateral adjustment test tape on the machine and play the tape, using the record head as a playback head.

5. Connect an output meter across the output.

6. Adjust the record head by slowly turning the non-spring loaded screw holding the clamp until the output meter indicates maximum response.

7. Apply one drop of shellac against the screw at the point where it enters the casting to lock it into place.

8. Replace the playback head leads and connect the record head leads to their proper pins.

9. Remove the lateral adjustment test tape from the machine, replacing it with a roll of tape which may be erased.

10. Connect an audio oscillator to the input jack, and record a 12,500 cycle or 15,000 cycle note for a period of several minutes.

11. Rewind the tape and play back the recorded note with output meter connected to the "Output" jack.

12. Adjust the playback head in the same manner as the record head was adjusted.

13. Place one drop of shellac on the screw at the point where it enters the casting, and replace the head cover.

Bias Oscillator Adjustment -

1. Slip one end of an insulated wire between the shield and tube on V6, and then wrap the other end of the wire around V1.

2. Wrap the output lead of a 60KC oscillator around the wire.

3. Turn the recorder on and connect an audio amplifier input to the playback amplifier output.

4. Turn the "Playback-Standby-Record" switch to "Record."

5. Adjust the bias oscillator slug to zero beat, as heard in the speaker.

Tone Peaking Coil Adjustment - (Record Amp.)

1. Connect an audio frequency generator, tuned to 15KC., to the input of the record amplifier.

2. Connect a VTVM, or oscilloscope, across the record head.

3. Turn the speed selector switch to 15" per second.

4. Turn the "Record-Standby-Playback" control to "Record."

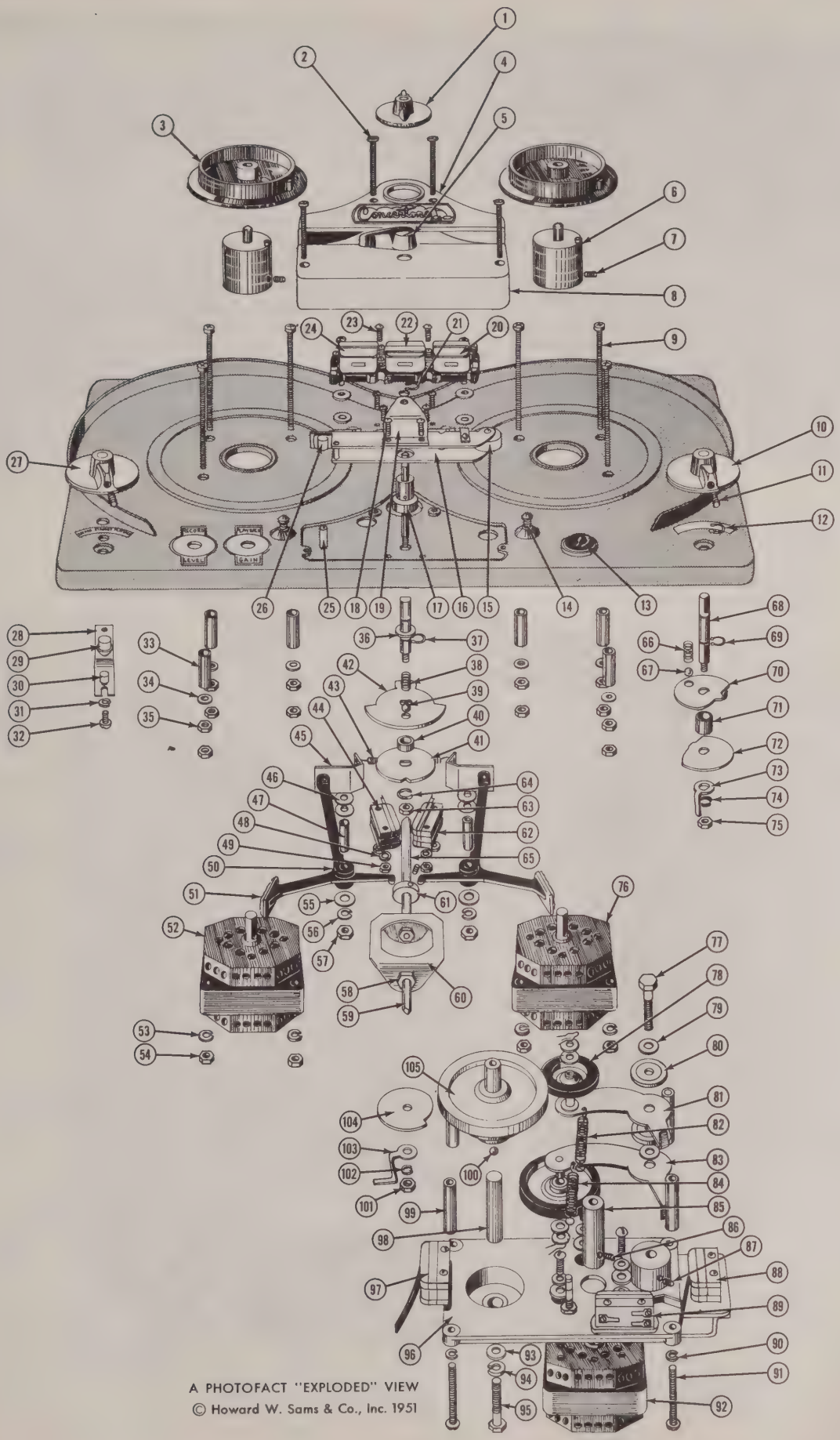
5. Adjust the tone peaking coil slug for maximum output indication.

Treble Tone Adjustment - (Playback Amp.)

1. Make a recording of 1,000, 8,000, and 15,000 cycles at a level so low that the eye barely starts to indicate at 1,000 cycles.

2. Play the tape back and measure the relative output at the three frequencies, with the selector switch set at "Playback" to prevent bias leakage from affecting the readings.

3. Adjust the treble tone trimmer until the readings agree as closely as possible. If a hump ap-



A PHOTOFACT "EXPLODED" VIEW

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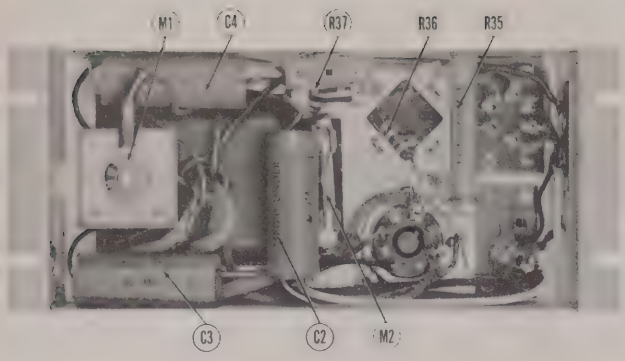


Figure 5

pears at the middle high frequencies, check for defective head or incorrect azimuth adjustment and readjust the treble tone trimmer (see Figure 6.)

Noise Adjustment - (Record Amp.)

1. Turn the selector switch to "Playback" and the "Playback-Gain" control to higher-than-normal operation.

2. Adjust the noise adjustment control until residual noise is reduced to a negligible amount. If the noise cannot be sufficiently reduced, check for magnetized head.

To Demagnetize Heads -

For quiet tape reproduction, the heads should be in a demagnetized state, particularly the playback. This can be done by passing the heads through an alternating current field strong enough to leave the core and shield material in a magnetically neutral state. A device for doing this can be made from the stator of a four-pole, shaded-pole phono motor. If the recorder is being used regularly, it is advisable to demagnetize at regular intervals.

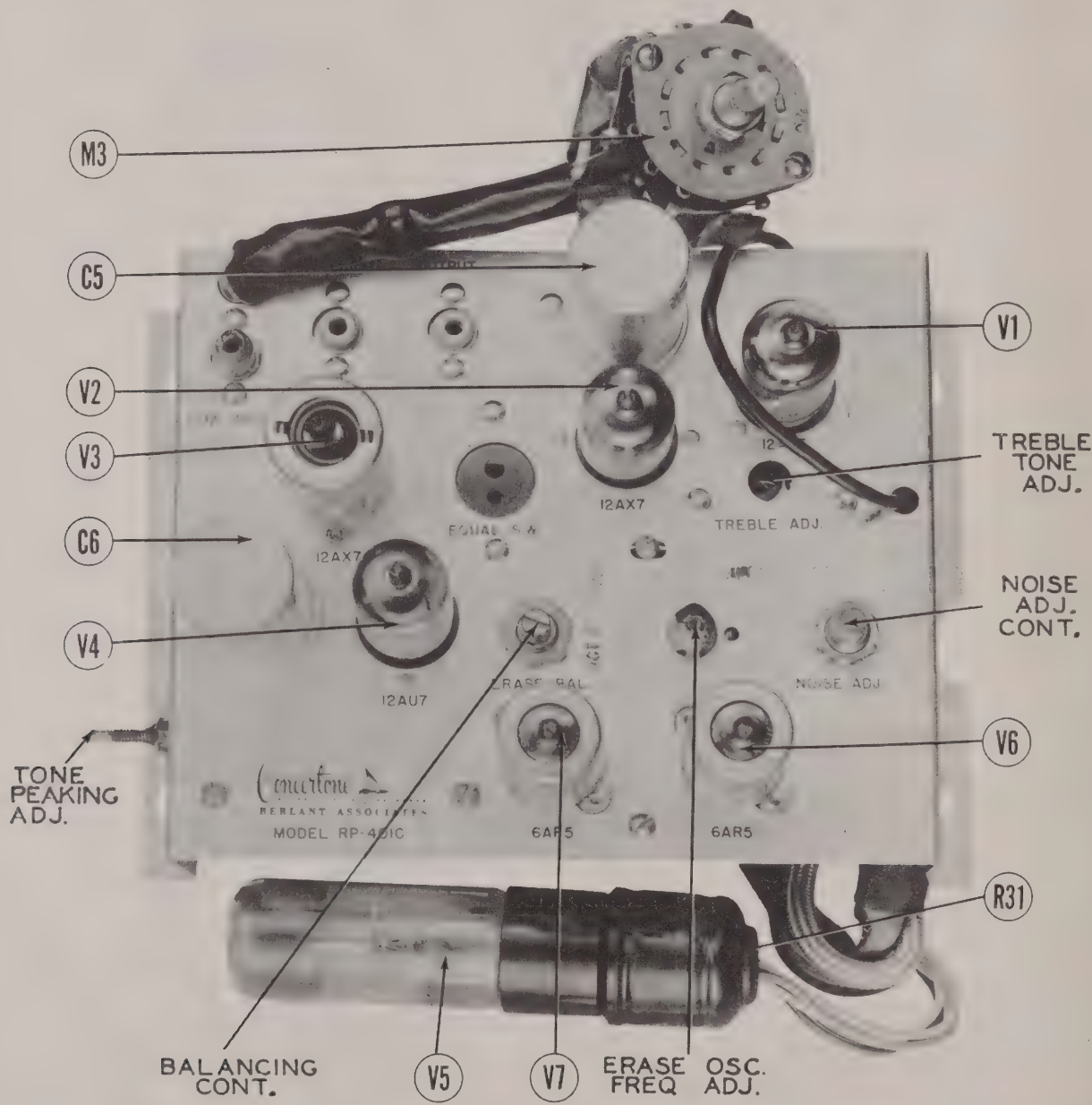


Figure 6

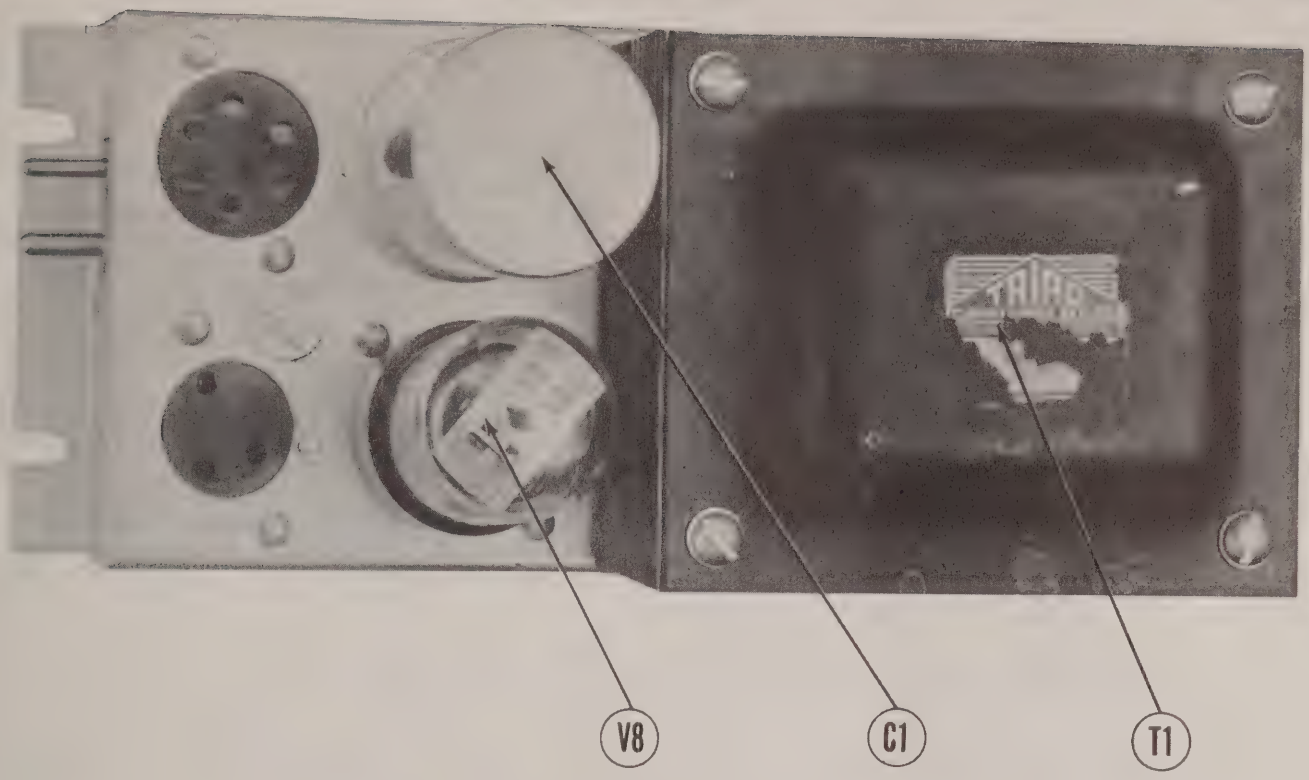


Figure 7

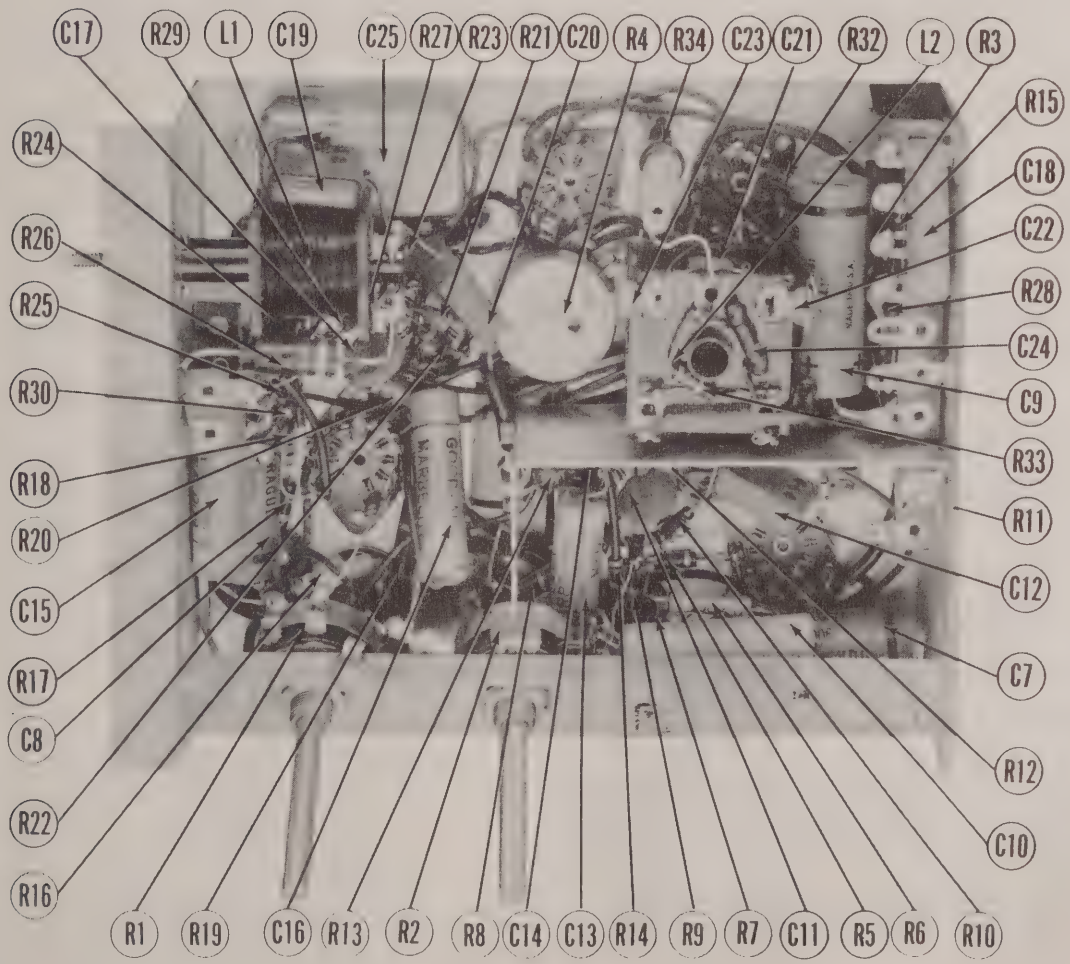
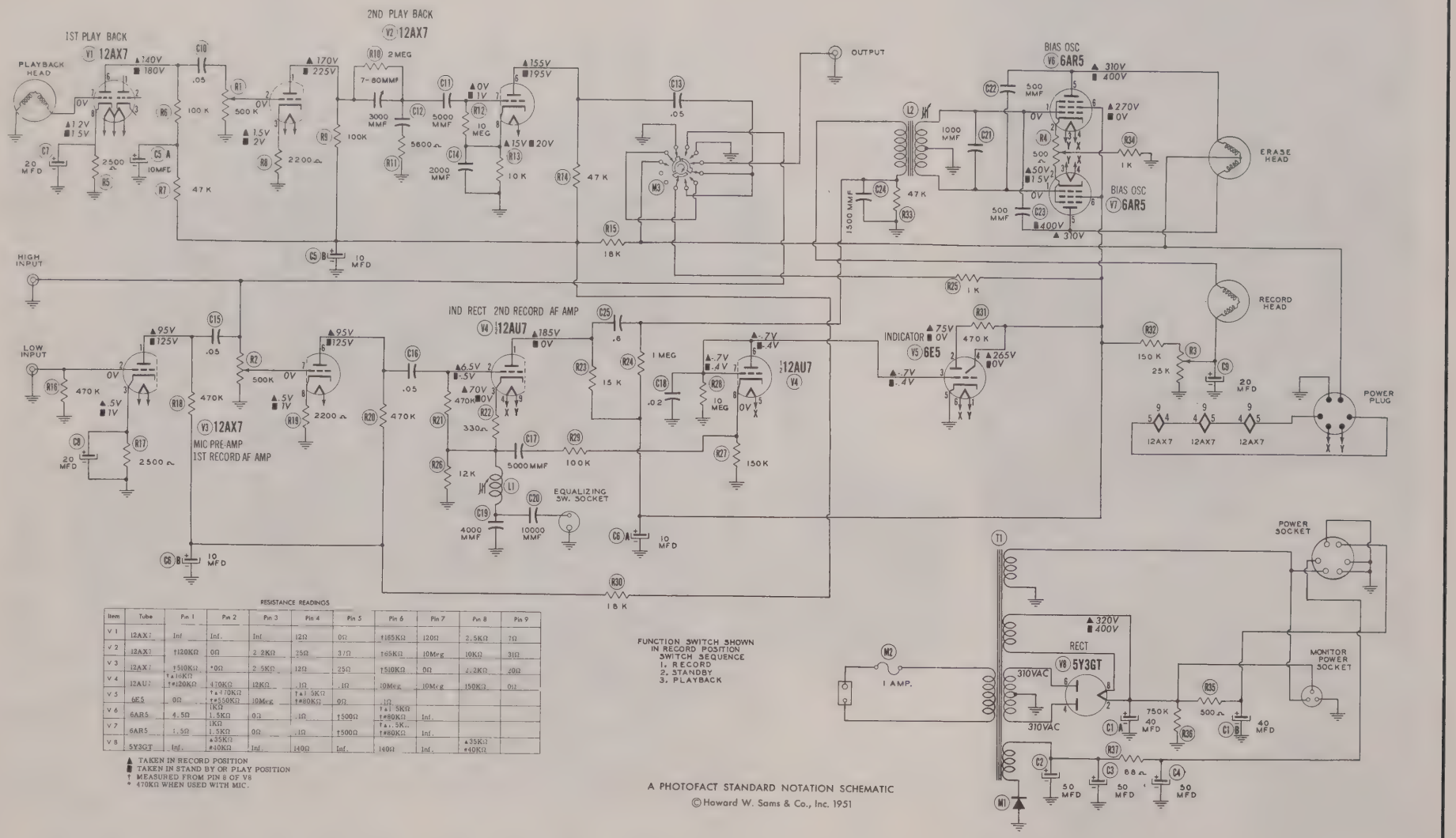


Figure 8



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AX7	Inf.	Inf.	Inf.	12Ω	0Ω	†165KΩ	120Ω	2.5KΩ	7Ω
V 2	12AX7	†120KΩ	0Ω	2.2KΩ	25Ω	3Ω	†65KΩ	10Meg	10KΩ	3Ω
V 3	12AX7	†510KΩ	*0Ω	2.5KΩ	12Ω	25Ω	†510KΩ	0Ω	2.2KΩ	20Ω
V 4	12AU7	†▲1MΩ †*120KΩ	470KΩ	12KΩ	1Ω	1Ω	10Meg	10Meg	150KΩ	0Ω
V 5	6E5	0Ω	†▲470KΩ †*550KΩ	10Meg	†▲1.5KΩ †*80KΩ	0Ω	1Ω			
V 6	6AR5	4.5Ω	1KΩ 1.5KΩ	0Ω	1Ω	†500Ω	†▲1.5KΩ †*80KΩ	Inf.		
V 7	6AR5	1.5Ω	1KΩ 1.5KΩ	0Ω	1Ω	†500Ω	†▲1.5K.. †*80KΩ	Inf.		
V 8	5Y3GT	Inf.	▲35KΩ *40KΩ	Inf.	140Ω	Inf.	140Ω	Inf.	▲35KΩ *40KΩ	

▲ TAKEN IN RECORD POSITION
■ TAKEN IN STAND BY OR PLAY POSITION
† MEASURED FROM PIN 8 OF V8
* 470KΩ WHEN USED WITH MIC.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ELECTRICAL PARTS LIST

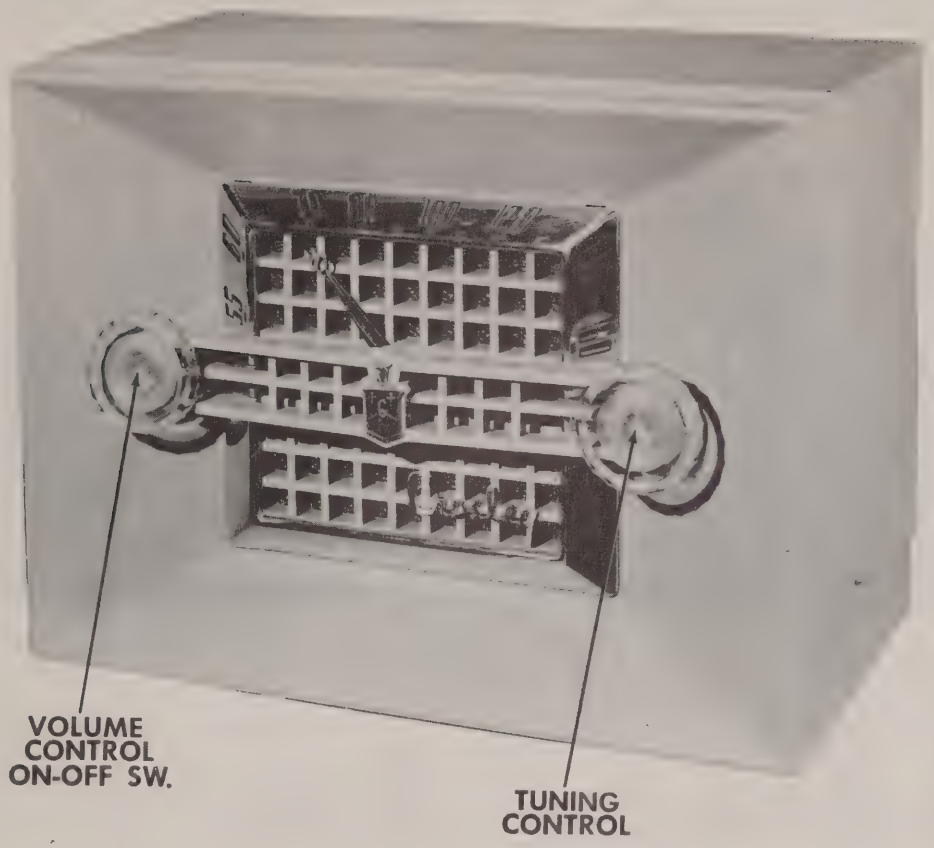
Item No.	Use and Description
V1	1st AF Amplifier, 12AX7
V2	2nd AF Amplifier, 12AX7
V3	Mic. Pre-Amp. - 1st Record Amp., 12AX7
V4	Indicator Rectifier - 2nd Record Amp., 12AU7
V5	Record Indicator, 6E5
V6	Bias Oscillator, 6AR5
V7	Bias Oscillator, 6AR5
V8	Rectifier, 5Y3GT
C1A	Filter, 40 Mfd. @ 450 Volts, Electrolytic
C1B	Filter, 40 Mfd. @ 450 Volts, Electrolytic
C2	Filter, 50 Mfd. @ 50 Volts, Electrolytic
C3	Filter, 50 Mfd. @ 50 Volts, Electrolytic
C4	Filter, 50 Mfd. @ 50 Volts, Electrolytic
C5A	1st AF Amp. Decoupling, 10 Mfd. @ 450 Volts, Electrolytic
C5B	Decoupling, 10 Mfd. @ 450 Volts, Electrolytic
C6A	Decoupling, 10 Mfd. @ 450 Volts, Electrolytic
C6B	Decoupling, 10 Mfd. @ 450 Volts, Electrolytic
C7	1st AF Amp. Cathode, 20 Mfd. @ 25 Volts, Electrolytic
C8	Mic. Pre-Amp. Cathode, 20 Mfd. @ 25 Volts, Electrolytic
C9	Noise Adjustment Bypass, 20 Mfd. @ 25 Volts, Electrolytic
C10	Audio Coupling, .05 Mfd. @ 600 Volts
C11	Audio Coupling, 5000 Mmf.
C12	Tone Compensation, 3000 Mmf. @ 300 Volts
C13	Audio Coupling, .05 Mfd. @ 600 Volts
C14	2nd AF Amp. Cathode, 2000 Mmf. @ 500 Volts
C15	Audio Coupling, .05 Mfd. @ 600 Volts
C16	Audio Coupling, .05 Mfd. @ 600 Volts
C17	Audio Coupling, 5000 Mmf.
C18	Indicator Filter, .02 Mfd. @ 600 Volts
C19	Tone Compensation, 4000 Mmf. @ 500 Volts
C20	Tone Compensation, 10,000 Mmf. @ 300 Volts
C21	Fixed Trimmer, 1000 Mmf.
C22	Oscillator Feedback, 500 Mmf.
C23	Oscillator Feedback, 500 Mmf.
C24	Tone Compensation, 1500 Mmf.
C25	Audio Coupling, .6 Mfd. @ 400 Volts
R1	Record Level Control, 500K Ohms, 1/2 Watt
R2	Playback Gain Control, 500K Ohms, 1/2 Watt
R3	Noise Adjustment Control, 25K Ohms, 1/2 Watt
R4	Balancing Control, 500 Ohms, 1 Watt, Wirewound
R5	1st AF Amp. Cathode, 2500 Ohms, 1/2 Watt
R6	1st AF Amp. Plate, 100K Ohms, 1/2 Watt
R7	1st AF Amp. Decoupling, 47K Ohms, 1/2 Watt
R8	2nd AF Amp. Cathode, 2200 Ohms, 1 Watt
R9	2nd AF Amp. Plate, 100K Ohms, 1/2 Watt
R10	Tone Compensation, 2 Meg., 1/2 Watt
R11	Tone Compensation, 5600 Ohms, 1/2 Watt
R12	2nd AF Amp. Grid, 10 Meg., 1/2 Watt
R13	2nd AF Amp. Cathode, 10K Ohms, 1 Watt
R14	2nd AF Amp. Plate, 47K Ohms, 1/2 Watt
R15	Decoupling, 18 K Ohms, 1/2 Watt
R16	Mic. Pre-Amp. Grid, 470K Ohms, 1/2 Watt
R17	Mic. Pre-Amp. Cathode, 2500 Ohms, 1/2 Watt
R18	Mic. Pre-Amp, Plate, 470K Ohms, 1 Watt
R19	AF Amp. Cathode, 2200 Ohms, 1 Watt
R20	AF Amp. Plate, 470K Ohms, 1 Watt
R21	AF Amp. Grid, 470K Ohms, 1/2 Watt
R22	AF Amp. Cathode, 330 Ohms, 1/2 Watt
R23	AF Amp. Plate, 15K Ohms, 2 Watt
R24	Voltage Divider, 1 Meg., 1/2 Watt
R25	Decoupling, 1000 Ohms, 1 Watt
R26	Bias Network, 12K Ohms, or 15K Ohms, 2 Watts
R27	Indicator Rectifier Load, 150K Ohms, 1/2 Watt
R28	Indicator Rectifier Load, 10 Meg., 1/2 Watt
R29	Indicator Network, 100K Ohms, 1/2 Watt
R30	Decoupling, 18K Ohms, 1/2 Watt
R31	Indicator Plate, 470K Ohms, 1/2 Watt
R32	Voltage Divider, 150K Ohms, 1/2 Watt
R33	Tone Compensation, 47K Ohms, 1/2 Watt
R34	Output Cathode, 1000 Ohms, 10 Watts, Wirewound
R35	Filter, 500 Ohms, 10 Watts, Wirewound
R36	Bleeder, 750K Ohms or 100K Ohms, 1 Watt
R37	Filament String, 68 Ohms, 2 Watts
T1	Power Transformer, Primary .48 Amp. @ 117 Volts AC.; Secondaries, #1 .045 Amp. @ 640 Volts CT.; #2 2 Amp. @ 5 Volts; #3 .95 Amp. @ 6.3 Volts, and #4 .13 Amp. @ 36 Volts.
L1	Tone Peaking Coil, 29 Ohms
L2	Bias Oscillator Coil, 60Kc.
M1	Selenium Rectifier
M2	Fuse, Type 3AG, 1 Amp.
M3	Switch, Record-Standby-Play

MECHANICAL PARTS LIST

Ref. No.	Description
1	Fast-Forward and Rewind Knob
2	6-32 x 1/4" Phillips Head Machine Screw
3	Reel Adaptor #801
4	Rear Trim Cover
5	Tape Guide Control Knob
6	Supply and Takeup Spindles
7	10-32 x 1/4" Allen Head Set Screw
8	Front Trim Cover
9	8-32 x 3" Phillips Head Machine Screw
10	Speed Selector Knob
11	10-32 x 1/4" Allen Head Set Screw
12	"Truarc" Retaining Ring
13	Pilot Light Indicator
14	Tape Guide
15	Pinch Roller
16	Pressure Pad Assembly
17	Pressure Pad Control Cam and Shaft Assembly
18	6-32 x 1/4" Round Head Machine Screw
19	Pressure Pad and Control Shaft Mounting Bracket
20	Playback Head
21	"Truarc" Retaining Ring
22	Record Head
23	10-24 x 1/4" Round Head Machine Screw
24	Erase Head
25	Pivot Bushing and Screw for Pressure Pad Arm Assembly Leaf Spring
26	Tension Leaf Spring for Pressure Pad Arm Assembly
27	Record Playback Control Knob
28	Record Safety Lock Spring
29	Safety Release Button
30	Control Knob Release Pin
31	Split Lockwasher
32	Mounting Screw for Safety Lock Spring
33	Motor Mounting Spacer
34	Flat Washer
35	8-32 Hex Nut

Ref. No.	Description
36	Fast-Forward and Rewind Shaft
37	"Truarc" Retaining Ring
38	Tension Spring for Item 39
39	Ball Bearing
40	Spacing Collar
41	Stop Cam
42	Fast Forward and Reverse Switch Cam
43	Brake Tension Spring
44	Rewind Switch
45	Brake Adjusting Cam Bracket
46	Flat Washer
47	Brake Lever Arm Spacer Bushing
48	Flat Washer
49	6-32 Hex Nut
50	Brake Arm
51	Brake Pad, Felt
52	Rewind Motor
53	Split Lockwasher
54	8-32 Hex Nut
55	Flat Washer
56	Split Lockwasher
57	8-32 Hex Nut
58	14-20 Hex Nut
59	Short Shaft for Tape Drive Brake Release
60	Formed Bracket for Tape Drive Brake Release
61	Brake Release Adjusting Collar
62	Fast-Forward Switch
63	Hex Nut
64	Split Lockwasher
65	Long Shaft for Tape Guide Brake Release
66	Indexing Spring
67	Ball Bearing
68	Speed Selector Control Shaft
69	"Truarc" Retaining Ring
70	Speed Control Cam for 7.5" per Sec. Operation
71	Spacing Collar
72	Speed Control Cam for 15" per Sec. Operation
73	Pilot Light Switch Finger
74	Split Lockwasher
75	Hex Nut
76	Takeup and Fast-Forward Motor
77	Mounting Screw for Items 81 and 83
78	Idler Wheel - 7.5" per Sec.
79	Flat Washer
80	Spacer
81	Idler Arm - 7.5" per Sec. Operation
82	Tension Spring for Item 81
83	Idler Mounting Arm for 15" per Sec. Operation
84	Tension Spring for Item 83
85	Capstan Motor Drive Bushing
86	Allen Head Set Screw
87	Allen Head Set Screw
88	Pilot Light Switch
89	Capstan Drive Motor Switch
90	Split Lock Washer
91	10-24 x 2" Round Head Machine Screw
92	Capstan Drive Motor
93	Flat Washer
94	Split Washer
95	14-20 x 3/4" Hex Head Machine Screw
96	Sub-Mounting Plate
97	Tape Drive Control Switch
98	Flywheel Bearing Shaft
99	Spacer Bushing for Mounting Sub-Base Plate
100	Ball Bearing
101	Hex Nut
102	Split Lockwasher
103	Tape Drive control Switch Actuating Finger
104	Brake Shaft Actuating Cam
105	Flywheel
106	Idler Wheel for 15" per Sec. Operation

CROSLEY MODELS
11-106U, 11-107U, 11-108U, 11-109U



CROSLEY MODELS
11-106U, 11-107U, 11-108U, 11-109U

CROSLEY MODEL 11-107U

TRADE NAME	Crosley Models 11-106U, 11-107U, 11-108U, 11-109U (Ch. 302)
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC-DC Operated Superheterdyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12BE6 Conv., 12BA6 IF Amp., 12SQ7GT (or) 12AV6 Det.-AVC-AF Amp., 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC-DC RATING .22 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to ext. ant. screw. Low side to B-	455KC (400~Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output
2.		Loop	1620KC	Tuning gang fully open.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune for max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		CROSLEY PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Det.-AVC-AF Amp.	12SQ7GT	12SQ7GT	8Q	12AV6 used as alternate
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CROSLEY PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	100	150	B-147174	PRS150/50-30-10		EDL8415		BR1015	Filter (Red)
B	30	150							Filter (Blue)
C	10	150		PRS150/50					Filter (Green)
C2	39		C-137727-109				N330K-390		Osc. Grid Cap.
C3	.1	200	39001-19	P288-1	DF-104	PTE3P1		2TM-P1	AVC Filter
C4	.08	200	39001-85						Phono Isolation
C5A	200			SI200	D6-201	5W5T2	GP2K-201		Diode RF Filter
B	.002		C-144675-1	P688-002	D6-202	PTE6D2	GP2-333-202	34C3	Audio Coupling
C	.005			P688-005	D6-502	PTE6D5	GP2-333-502		Audio Coupling
D	200			SI200	D6-201	5W5T2*	GP2K-201		AF Amp. Plate
C6	100		B-143686-3	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	Diode RF Filter
C7	.0005	600	39001-5	SI500	D6-501	5W5T5	GP2K-501	6TM-T5	Audio Coupling
C8	.005	600	39001-11	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C9	.002	600	39001-74	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Tone Comp.
C10	.01	400	39001-13	P488-01	D6-103	PTE-4S1	GP2-333-103	4TM-S1	Power Output Plate
C11	.05	600	39001-17	P688-05	DF-503	PTE6S5		6TM-S5	Line Filter
C12	.08	200	39001-85						Line Isolation

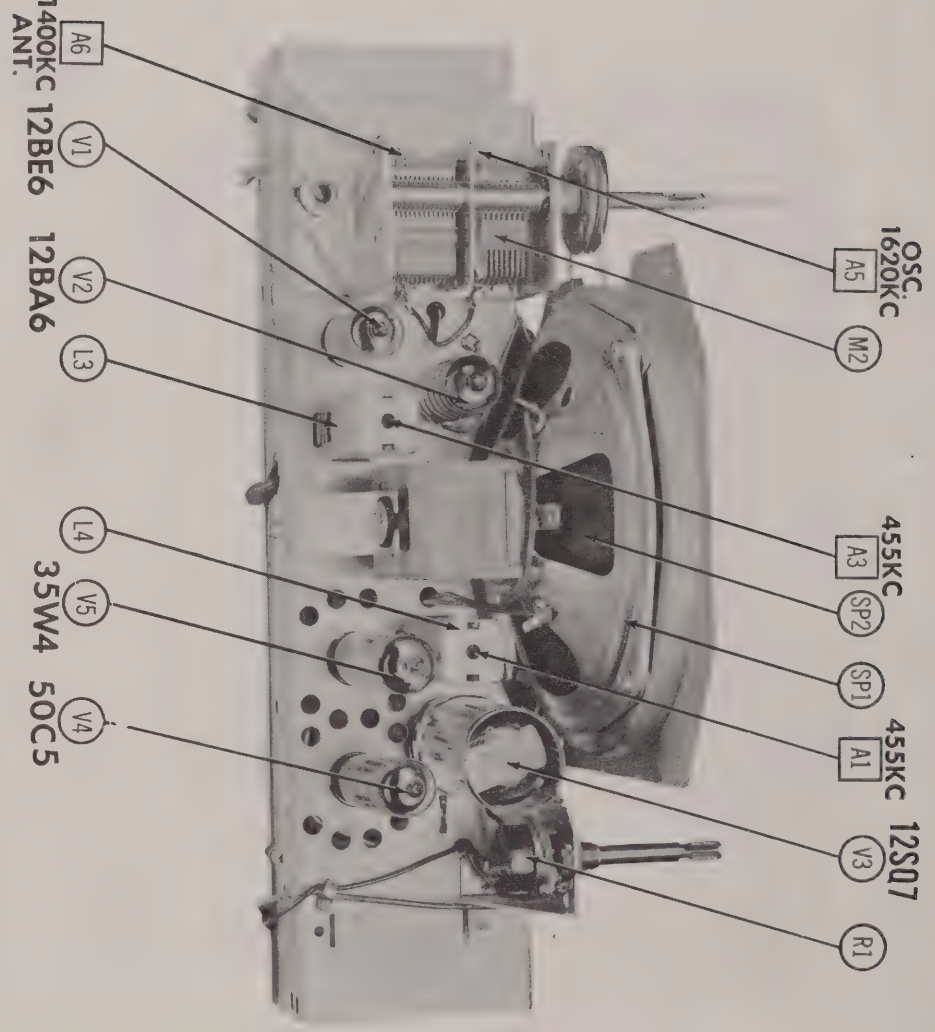
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
V1	3Meg	½	B-148327			SBT-223-S	Volume Control & Switch

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CROSLEY PART No.	IRC PART No.	
R2	22KΩ	½	39373-60	BTS-22K	Oscillator Grid
R3	2.2Meg	½	39373-97	BTS-2.2Meg	AVC Network
R4	100KΩ	½	39373-74	BTS-100K	Detector Diode Plate Load
R5	5600Ω	½	39374-34	BTS-5600	Hum Balance
R6	10Meg	½	39373-107	BTS-1Meg	AF Amplifier Grid
R7	470KΩ	½	39373-67	BTS-470K	AF Amplifier Plate
R8	680KΩ	½	39373-90	BTS-680K	Tone Compensation
R9	47KΩ	½	39373-67	BTS-47K	Tone Compensation
R10	470KΩ	½	39373-87	BTS-470K	Output Grid
R11	150Ω	½	39373-16	BTS-150	Output Cathode
R12	1000Ω	½	39373-33	BTS-1000	Filter
R13	1200Ω	1	39374-114	BTA-1200	Filter
R14	100Ω	1	39374-189	BTA-100	Surge Limiter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CROSLEY PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3KΩ	4.1Ω	350Ω	.6Ω	B-147171	A-3876①	A-3025①	RO-2	① Drill One New Mounting Hole

SPEAKER

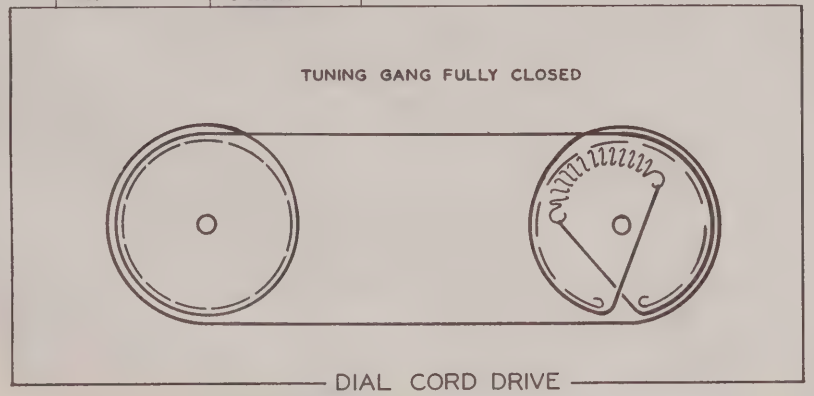
ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CROSLEY PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	4.1Ω	AD-145956-2	525J4	52A1	
	CONE DIA.	V. C. DIA.				
SP2	5"	9/16"				

COILS (RF-IF)

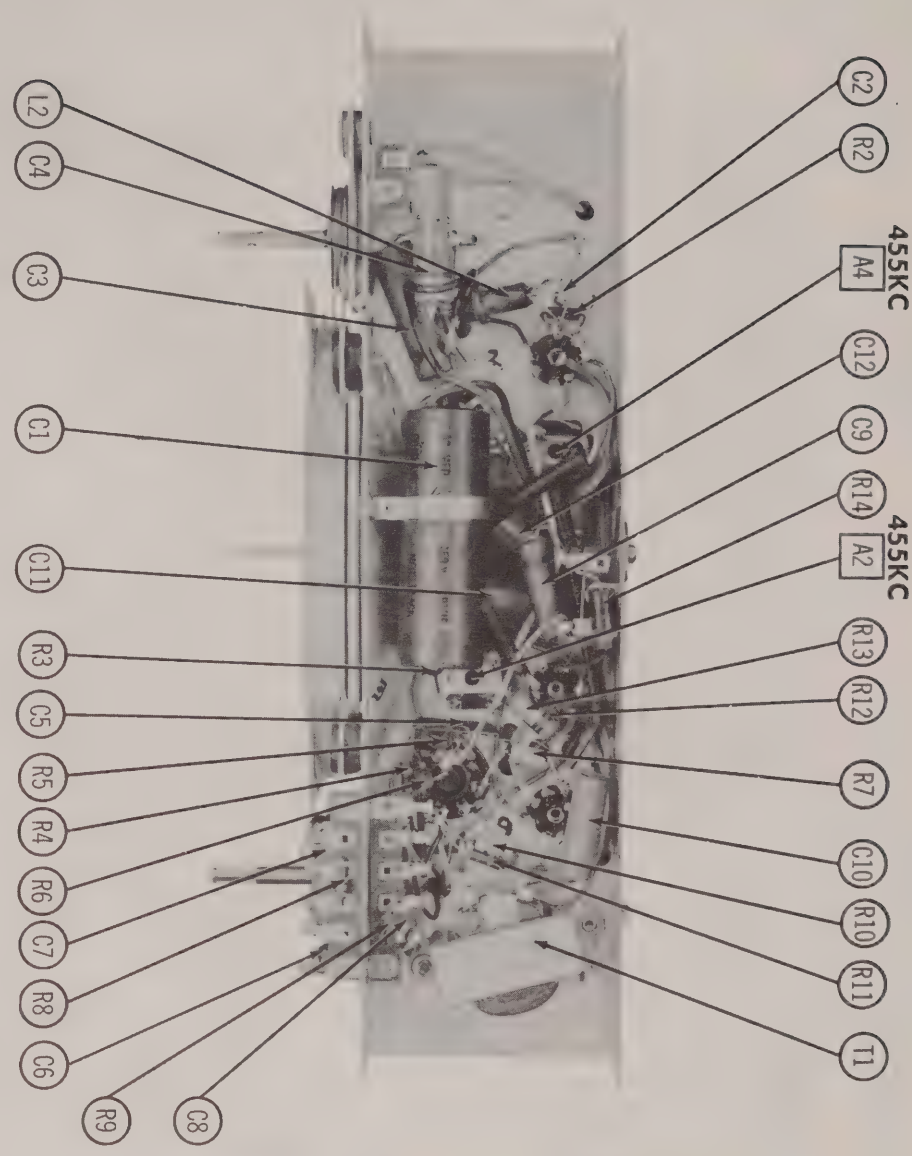
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CROSLEY PART No.	MERIT PART No.	
L1	Loop Ant.	0Ω	2.4Ω	AC-148752		
L2	Osc. Coil	.9Ω	9.3Ω	AW-148259		
L3	Input IF	16Ω	16Ω	AC-139919-3		
L4	Output IF	16Ω	16Ω	AC-139919-3		

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M1	Switch	W-148260	Radio - Phono
M2	2 Gang Var. Cap.	B-148745	(31-470MMF, 18-157MMF)
	Cabinet	R-148672	Model 11-106U (Black)
	Cabinet	AB-148962-1	Model 11-107U (Beige)
	Cabinet	AB-148962-2	Model 11-108U (Burgandy)
	Cabinet	AB-148962-3	Model 11-109U (Green)
	Dial Pointer	AW-148773	With Clip Assembly
	Escutcheon	C-148674	
	Knob	C-148708	



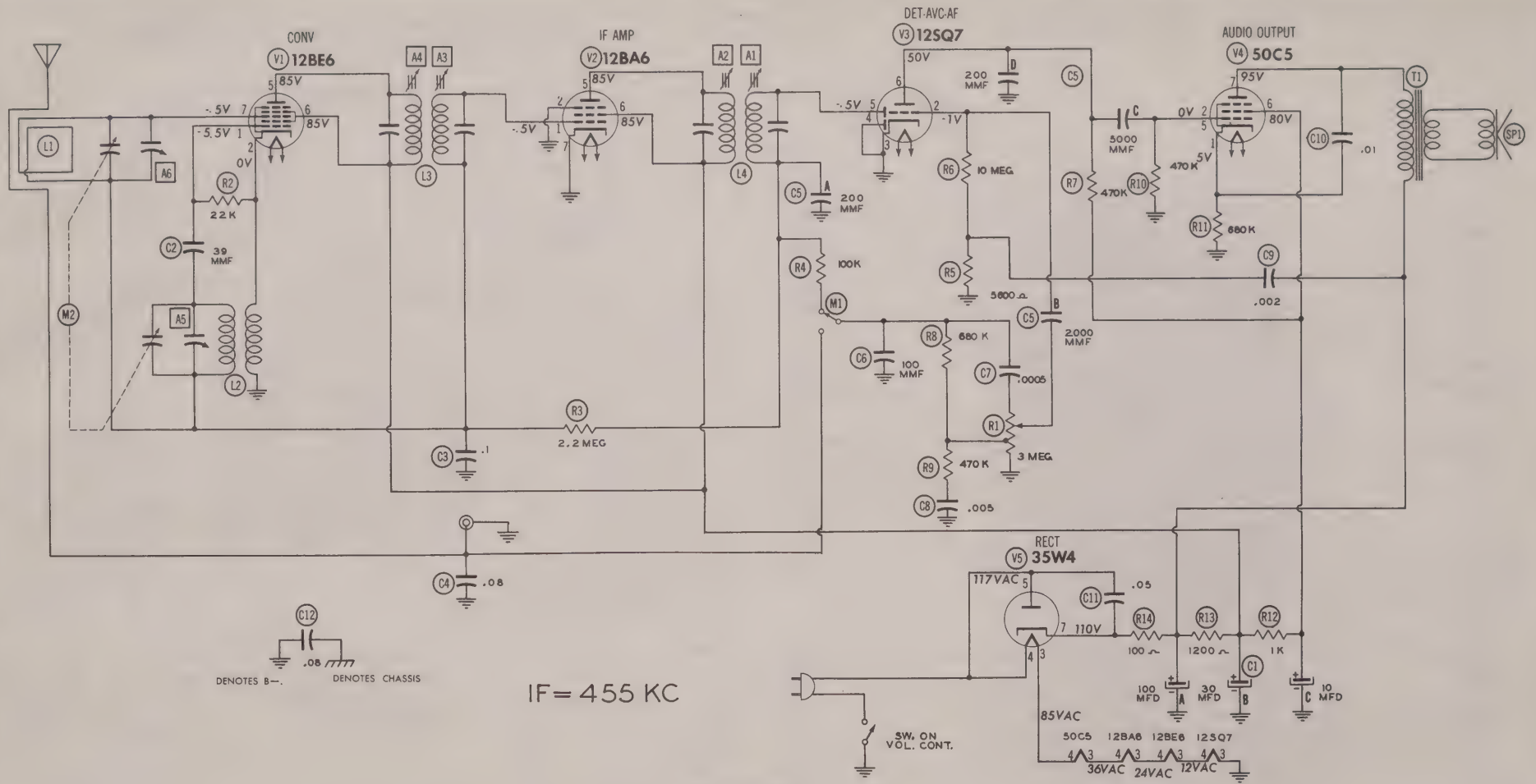
CHASSIS—BOTTOM VIEW



SET 155 FOLDER 5

CROSLEY MODEL 11-107U

CROSLEY MODEL 11-107U



IF = 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BE6	22KΩ	.8Ω	12Ω	24Ω	†1.3KΩ	†1.3KΩ	3.1Meg	
V 2	12BA6	3.1Meg	0Ω	24Ω	36Ω	†1.3KΩ	†1.3KΩ	0Ω	
V 3	12SQ7GT	Inf.	10Meg	0Ω	0Ω	1Meg	†470KΩ	12Ω	0Ω
V 4	50C5	150Ω	470KΩ	36Ω	86Ω	470KΩ	†2.3KΩ	†450Ω	
V 5	35W4	250KΩ	Inf.	86Ω	121Ω	121Ω	110Ω	250KΩ	

▲ TAKEN WITH VACUUM TUBE VOLTMETER
ALL MEASUREMENTS TAKEN IN RADIO POSITION
† MEASURED FROM PIN 7 OF V5

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

FIRESTONE
MODEL 4-B-61

FIRESTONE
MODEL 4-B-61

TRADE NAME	Firestone, Model 4-B-61
MANUFACTURER	Firestone Tire & Rubber Co., 1200 Firestone Pkwy., Akron, Ohio .
TYPE SET	Battery Operated Custom Built 1951 Chevrolet, Superheterodyne Receiver
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AV6 or 6AT6 Det.-AVC-AF, 6AQ5 Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 6 Amp. @ 6.3 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set the pointer mid-way between the fives of the 55 calibration. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (grid) of 6BE6, (V2). Low side to chassis.	455KC (400 ∿Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	100MMF	High side to antenna socket. Low side to chassis.	1600KC	"	"	A5	"
3.	"	"	1400KC	Tune for maximum output.	"	A6, A7	"
4.	"	"	600KC	"	"	A8, A9	Adjust for maximum output. Repeat steps 3 and 4 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FIRESTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4A	Det. -AVC-AF	6AV6	6AV6	7BT	
B	Det. -AVC-AF	6AT6	6AT6	7BT	
V5	Power Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	350	CE-86	AFH 3-107		UP2235C		TVL-3678	■ Filter
B	20	350							▲ Filter
C	20	25							Output Cathode
C2	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	RF Amp. Screen
C4	.05	200	C207	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C5	100		CC200	SI100NPO	TCZ-100		NPO-333-101	5TCC-T1	Osc. Grid Cap.
C6	220			SI220	D6-221	5W5T25	GP2K-221	5GA-T22	Diode RF Filter †
C7	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling †
C8	220			SI220	D6-221	5W5T25	GP2K-221	5GA-T22	AF Amp. Grid ‡
C9	220			SI220	D6-221	5W5T25	GP2K-221	5GA-T22	AF Amp. Plate ‡
C10	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C11	.01	600	C206	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Output Plate
C12	.008	1600	C205			PTE16D8		MB-D8	Buffer Cap.
C13	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter
C14	.5	100	C209	P185-5		GT2P5		68P20	Hash Filter

† Some models use .002MFD in this application (Part No. C203)
‡ Some models use 200MMF in this application (Part No. CC201)

CONTROLS

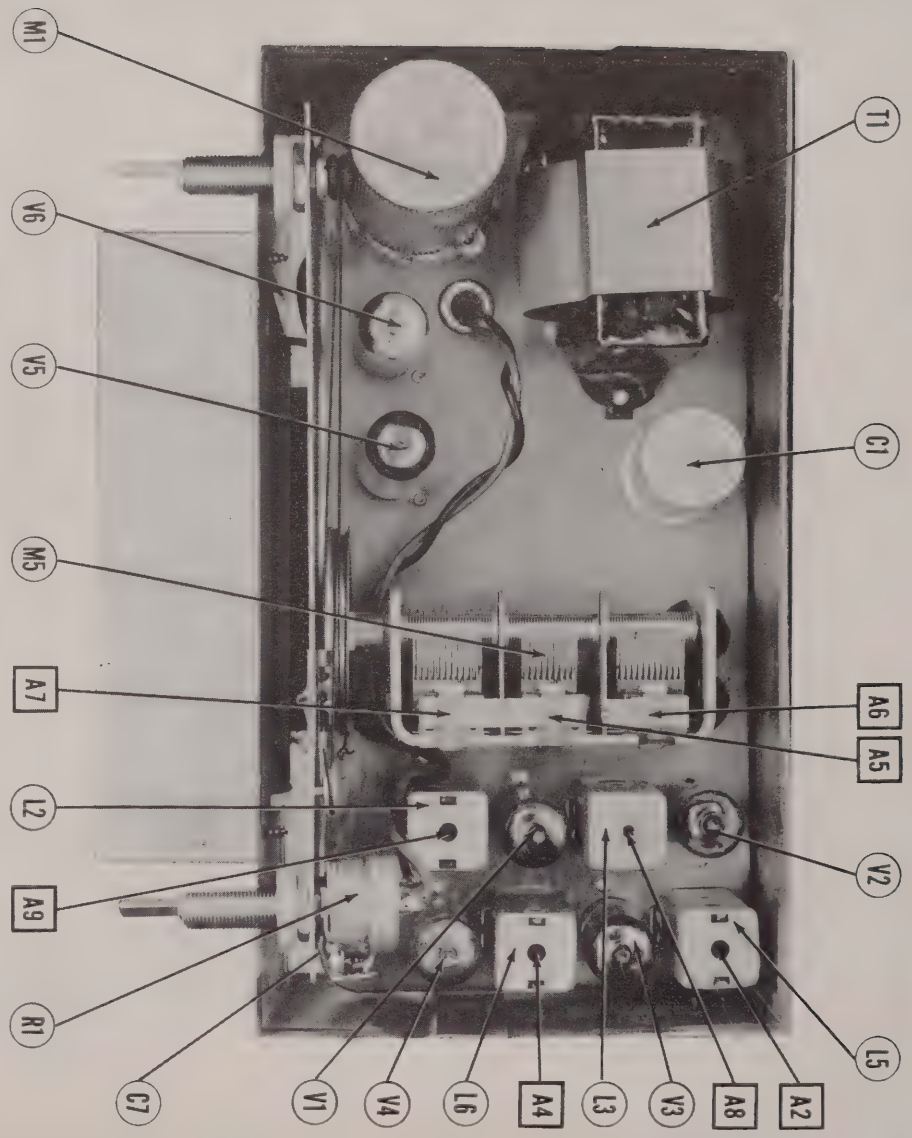
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	750K	½	RV-200	Q13-137			Volume Control
B	Bushing		Not Req.	S-4			Attach to R1A
C	Switch		Not Req.	76-1			Attach to R1A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1Meg	½	R309	BTS-1Meg	AVC Network
R3	330Ω	½	R303	BTS-330	RF Amp. Cathode
R4	22KΩ	½	R306	BTS-22K	Osc. Grid-See Note 1
R5	1500Ω	½	R314	BTS-1500	IF Amp. Cathode
R6	22KΩ	2	R313	BTB-22K	Screen Dropping-See Note 1
R7	2.2Meg	½	R310	BTS-2.2Meg	AVC Network-See Note 2
R8	10Meg	½	R311	BTS-10Meg	AF Amp. Grid
R9	270KΩ	½	R307	BTS-270K	AF Amp. Plate-See Note 3
R10	680KΩ	½	R308	BTS-680K	Output Grid-See Note 4
R11	330Ω	½	R303	BTS-330	Output Cathode
R12	1000Ω	1	R312	BTA-1000	Filter
R13	68Ω	½	R301		Hash Suppressor-See Note 5
R14	68Ω	½	R301		Hash Suppressor-See Note 5

Note 1 Some models use 20KΩ resistor in this application.
Note 2 Some models use 2Meg resistor in this application.
Note 3 Some models use 250KΩ resistor in this application.
Note 4 Some models use 500KΩ resistor in this application.
Note 5 Some models use 100Ω resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6.3VDC @3.4A	530VCT .040ADC			TV-100 or TV-86A		P-2971	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		FIRESTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4KΩ	3Ω	380Ω	.5Ω	Part of PM-250	A-3877	A-2930	RO-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			FIRESTONE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD RES.	V.C. IMP.				
SP1	PM	3Ω	PM250	ST108 Mod. P525-V	52A1	
	CONE DIA.	V.C. DIA.				
SP2	5"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	FIRESTONE: PART No.	MERIT PART No.	
L1	Ant. Hash Choke	1.1Ω		L200		Wound on Capacitor
L2	Ant. Coil	14Ω	5Ω	57FB-3		
L3	RF Coil	100Ω	7.5Ω	57FB-4		
L4	Osc. Coil	9Ω	Tap .9Ω	L201		
L5	1st IF	19Ω	19Ω	1655-16		
L6	2nd IF	19Ω	19Ω	1655-16		
L7	Hash Choke	0Ω		L202		
L8	Hash Choke	0Ω		L203		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				FIRESTONE; PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.3V	115Ω	V-94	5301	5301	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			FIRESTONE PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	15A	A201		311015	155020	

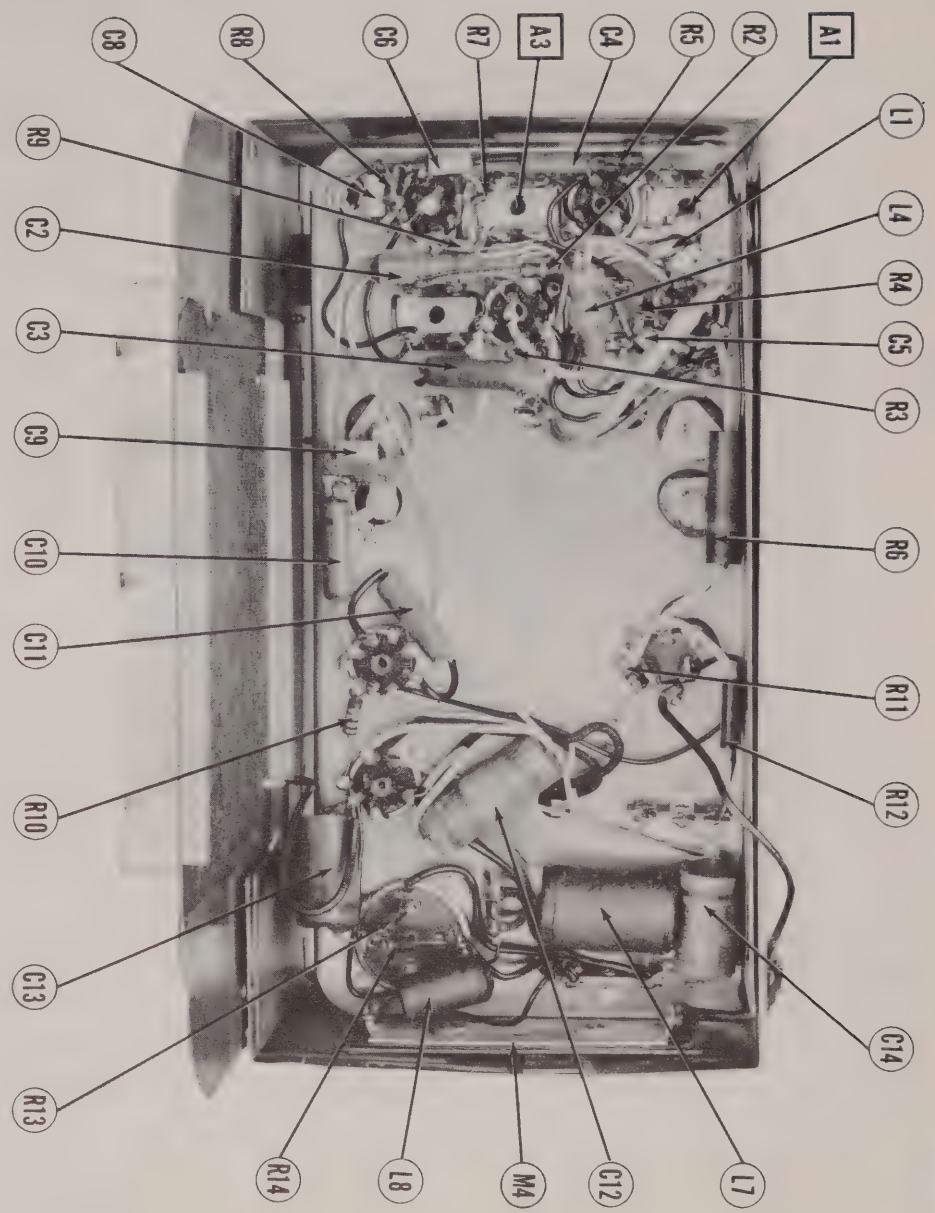
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					FIRESTONE PART No.		
M3	Bayonet	6-8	.15	Brown	T51		Type number 47.

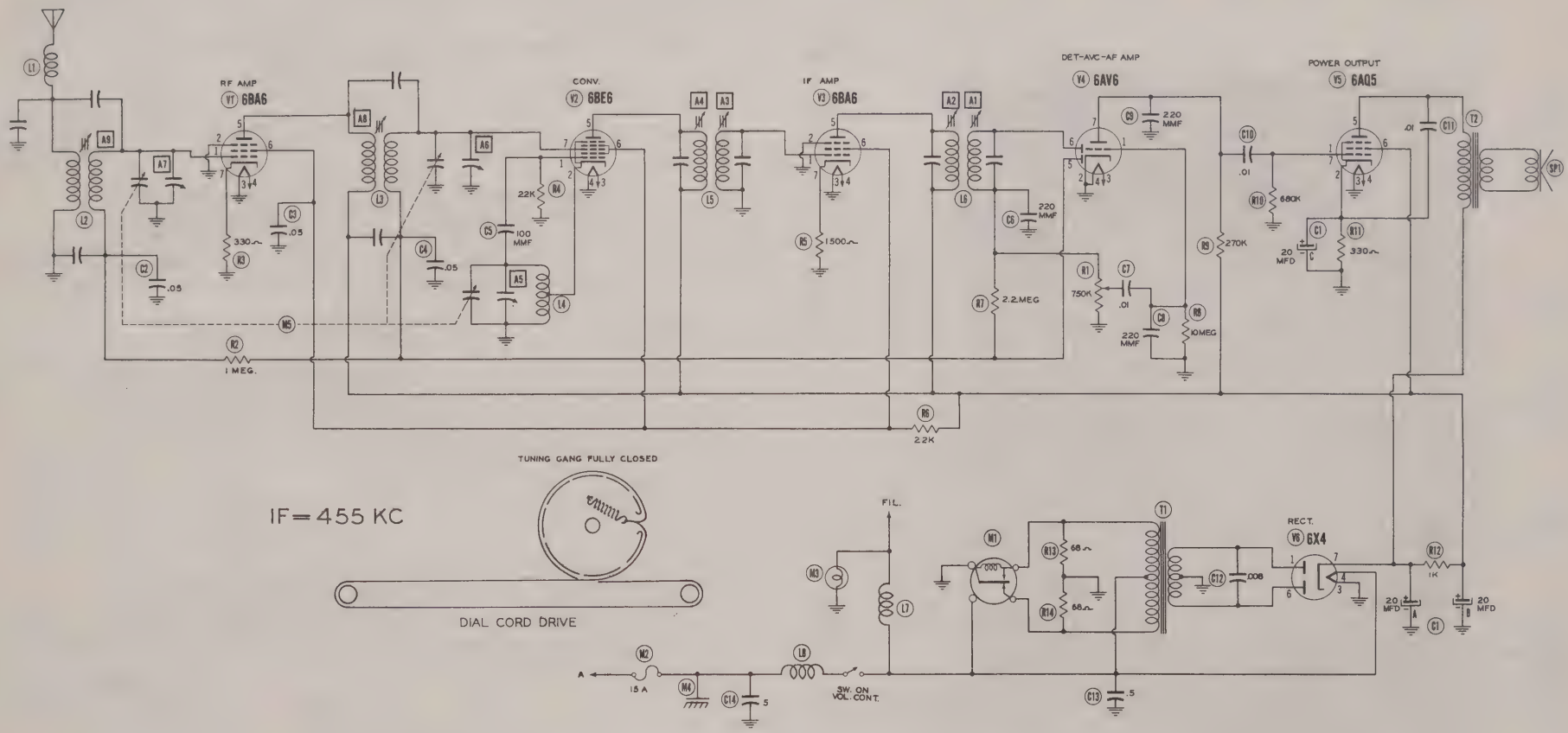
MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M4	Spark Plate		
M5	3 Gang Var. Cap.	CV-200	(24-387MMF, 20-317MMF, 37-227MMF)
	Knob	H310	
	Dial Scale	D351	
	Dial Pointer	PS351	

CHASSIS—BOTTOM VIEW



FIRESTONE MODEL 4-B-61



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	-.1VDC	0V	0V	6.3VDC	300VDC	75VDC	.9VDC
V 2	6BE6	†-6.7VDC	0V	6.3VDC	0V	300VDC	75VDC	-.5VDC
V 3	6BA6	0V	0V	0V	6.3VDC	300VDC	75VDC	2.2VDC
V 4	6AV6	-.6VDC	0V	6.3VDC	0V	-.5VDC	-.5VDC	80VDC
V 5	6AQ5	0V	11.4VDC	0V	6.3VDC	205VDC	205VDC	0V
V 6	6X4	250VAC	0V	0V	6.3VDC	0V	250VAC	215VDC

† TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	3.7Meg	0Ω	0Ω	.4Ω	†1KΩ	†23KΩ	330
V 2	6BE6	22KΩ	.9Ω	.4Ω	0Ω	†1KΩ	†23KΩ	2.7Meg
V 3	6BA6	1ΩΩ	0Ω	0Ω	.4Ω	†1KΩ	†23KΩ	1.5KΩ
V 4	6AV6	10Meg	0Ω	.4Ω	0Ω	2.7Meg	750KΩ	†270KΩ
V 5	6AQ5	680KΩ	330KΩ	0Ω	.4Ω	†380Ω	†1KΩ	680KΩ
V 6	6X4	250Ω	Inf.	0Ω	.4Ω	Inf.	270Ω	40KΩ

† MEASURED FROM PIN 7 OF V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

HALLICRAFTERS
MODEL 5R10A

HALLICRAFTERS
MODEL 5R10A

TRADE NAME	Hallicrafters Model 5R10A
MANUFACTURER	Hallicrafters C., Inc., 4401 W. 5th Ave., Chicago Ill.
TYPE SET	AC-DC Operated Multi-Band Superheterodyne Receiver
TUBES (five)	Types 12SA7 Conv., 12SK7 IF Amp., 12SQ7 Det.-AVC-AF Amp. 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-DC RATING .25 Amp. @ 117 Volts AC
TUNING RANGE	(Band #1) 540-1650KC, (Band #2) 1, 65-5.1MC, (Band #3) 5-14.5 MC, (Band#4) 13-31 MC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to the reference mark to the left of 55 on the BC scale.
To set band spread pointer, turn bandspread tuning gang fully open and set pointer to zero on the reference scale.
The RMA dummy antenna referred to in the alignment table consists of a 200 MMF capacitor in series with a 20 microhenry choke which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.
Turn the bandspread dial to zero on the reference scale.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to stator on front section of tuning gang. Low side to chassis.	455KC (400Ω Mod).	1	1000KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .0001MFD to reduce hum modulation.
2.	RMA	High side thru dummy to antenna terminal A1(connect jumper between A2 and G) Low sideto chassis.	30MC	4	30MC	"	A5, A6	Adjust for maximum output. Rock tuning gang while adjusting A6.
3.	"	"	14MC	3	14MC	"	A7, A8	Adjust for max. output. Rock tuning gang while adjusting A7.
4.	"	"	5MC	2	5MC	"	A9, A10	Adjust for maximum output. Rock tuning gangwhile adjusting A9.
5.	"	"	1500KC	1	1500KC	"	A11, A12	Adjust for maximum output.
6.	"	"	600KC	1	600KC	"	A13	Repeat steps 5&6 until no further improvements can be made.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		HALLICRAFTER PART No.	STANDARD REPLACEMENT		
V1	Converter	90X12SA7	12SA7	8R	
V2	IF Amplifier	90X12SK7	12SK7	8N	
V3	Detector-AVC-AF Amplifier	90X12SQ7GT	12SQ7GT	8Q	
V4	Power Output	90X50L6GT	50L6GT	7AC	
V5	Rectifier	90X35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

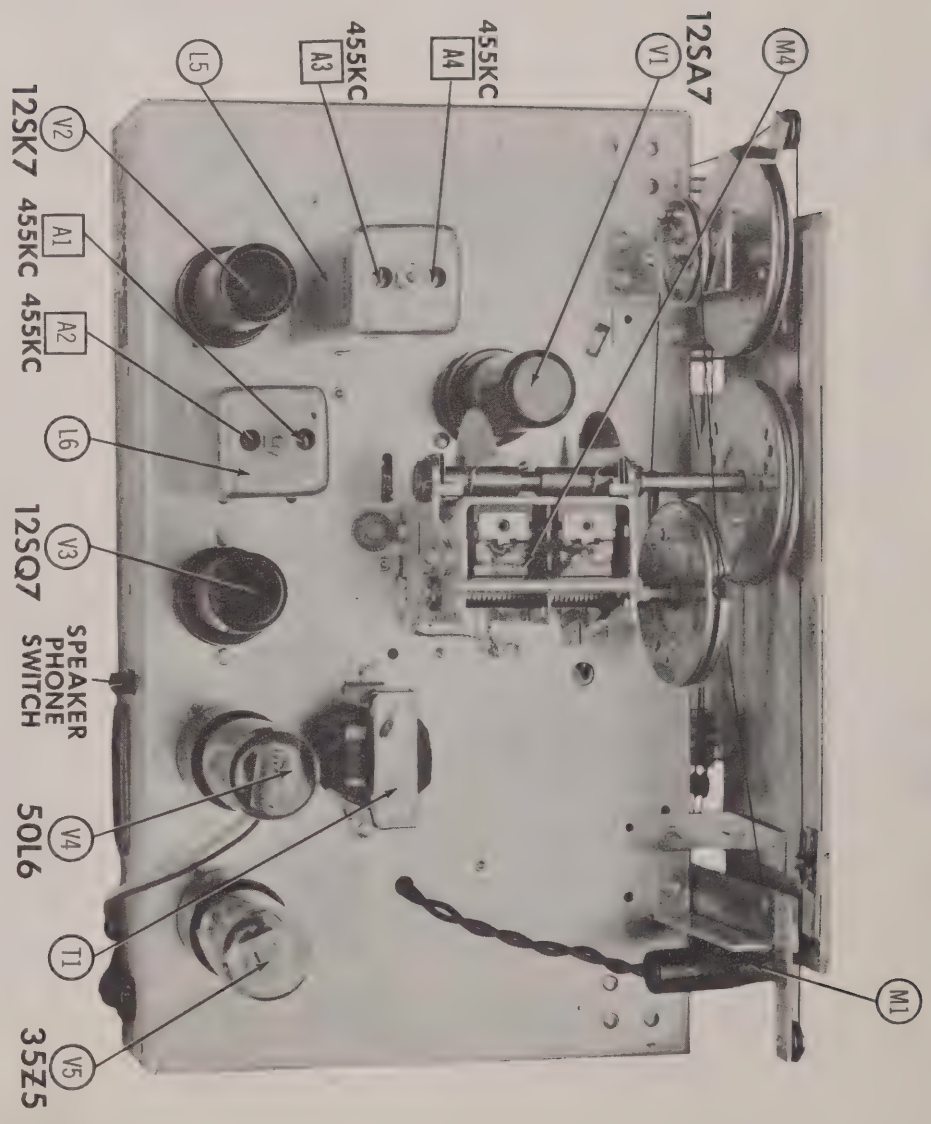
ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	HALLICRAFTER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	150	45B091	PRS150/40-40 40		EZ55515C		TVA-3451	Filter (Red)
B	40	150		PRS25/25				TVA-1205	Filter (Yellow)
C	40	150							Decoupling (Yellow)
D	20	25							Output Cathode (Blue)
C2	2700	500	47X30B272J	1464-003		1R5D3		MS-23	Fixed Padder
C3	220	500	47B2022IK5	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	RF Coupling
C4	5000		47A168	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Conv. Plate Dec.
C5	220	500	47X20B22IK	1469-00025		5R5T25			Osc. Grid Cap.
C6	3000	500	47X30B302J	1464-003		1R5D3		MS-23	Fixed Padder
C7	2200	500	47X30B222J	1464-0025		1R5D25			Fixed Padder
C8	5000		47A168	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Osc. Feedback
C9	.02	600	46AY203J	P688-02	DF-203	PTE6S2		6TM-S2	AVC Filter
C10	.1	600	46AZ104J	P688-1	DF-104	PTE6P1		6TM-P1	IF Amp. Decoupling
C11	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	IF Amp. Cathode Bypass
C12	220	500	47B2022IK5	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Diode RF Filter †
C13A	220			SI220	D6-221	5W5T25	GP2K-221		Diode RF Filter
B	.002			P688-002	D6-202	PTE6D2	GP2-333-202		Audio Coupling
C	220		46A151	SI220	D6-221	5W5T25	GP2K-221	34C3	AF Amp. Plate
D	.005			P688-005	D6-502	PTE6D5	GP2-333-502		Audio Coupling
C14	.01	600	46AZ103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C15	.02	600	46AY203J	P688-02	DF-203	PTE6S2		6TM-S2	Power Output Plate
C16	.02	400	46BR203LG	P488-02	DF-203	IPTE4S2		4TM-S2	Line Filter
C17	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Line Isolation

† Some models use 100MMF in this application (Part No. 47X220B101K)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	2 Meg	½	25B896	Q13-139	AG-66-Z	AN-76	Volume Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-3	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	K-155	Attach to R1A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	HALLICRAFTER PART No.	IRC PART No.	
R2	10KΩ	½	23X20X103M	BTS-10K	Antenna Coil Shunt.
R3	470KΩ	½	23X20X474M	BTS-470K	Converter Grid.
R4	2.2Meg	½	23X20X225M	BTS-2.2Meg	AVC Network
R5	2.2Meg	½	23X20X225M	BTS-2.2Meg	AVC Network
R6	22KΩ	½	23X20X223M	BTS-22K	Oscillator Grid
R7	15Ω	½	23X20X150M		Parasitic Suppressor-See note
R8	22Ω	½	23X20X220M		Parasitic Suppressor
R9	390Ω	½	23X20X391K	BTS-390	IF Cathode
R10	390Ω	½	23X20X391K	BTS-390	IF Amplifier Decoupling
R11	47KΩ	½	23X20X473M	BTS-47K	Diode Filter
R12	470KΩ	½	23X20X474M	BTS-470K	Diode Filter
R13	10Meg	½	23X20X106M	BTS-10Meg	AF Amplifier Grid
R14	220KΩ	½	23X20X224M	BTS-220K	AF Amplifier Plate
R15	470K	½	23X23X474M	BTS-470K	Output Grid
R16	150Ω	½	23X20X151K	BTS -150K	Output Cathode
R17	220Ω	1	25X20X221M	BTA-220	Filter
R18	1000Ω	½	23X20X102Ω	BTS-1000	Filter
R19	22Ω	½	23X20X220M		Surge Limiter
R20	15Ω	½	23X20X150Ω		Head Phone Shunt
R21	15Ω	½	2 3X20X150Ω		Series Dial Light

NOTE: Some models use 10Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	1.7KΩ	3.2Ω	147Ω	.8Ω	55A127	A-3876	A2928	R0-2	

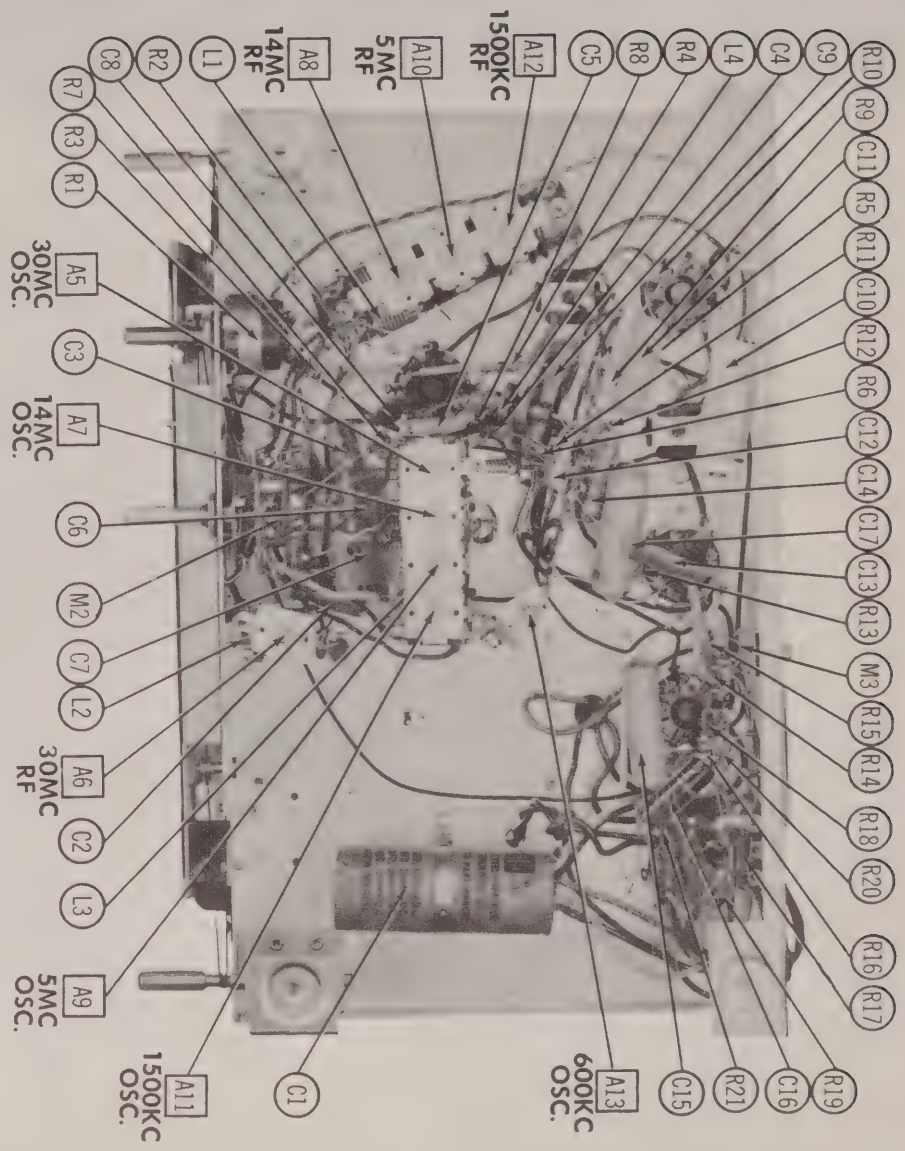
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD	V. C. IMP.	Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.	
SP1	P.M.	3.2Ω	85C030	ST-105 Mod P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP2	4½ in.	9/16 in.				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Hallicrafters PART No.	MERIT PART No.	
L1A	Ant. Coil	27Ω	0Ω			Band 1
B	Ant. Coil	1Ω	0Ω	51C821		Band 2
C	Ant. Coil		0Ω			Band 3
L2	Ant. Coil	.2Ω	0Ω	51B1015		Band 4
L3A	Osc. Coil	2.4Ω				Band 1 Tap at 2Ω
B	Osc. Coil	2Ω		51C822		Band 2 Tap at 2Ω
C	Osc. Coil	0Ω				Band 3
D	Osc. Coil	0Ω	0Ω			Band 4
L4	RF Choke	9.3Ω		53A107		
L5	Input IF	20Ω	20Ω	50B183		
L6	Output IF	20Ω	20Ω	50B184		

CHASSIS—BOTTOM VIEW



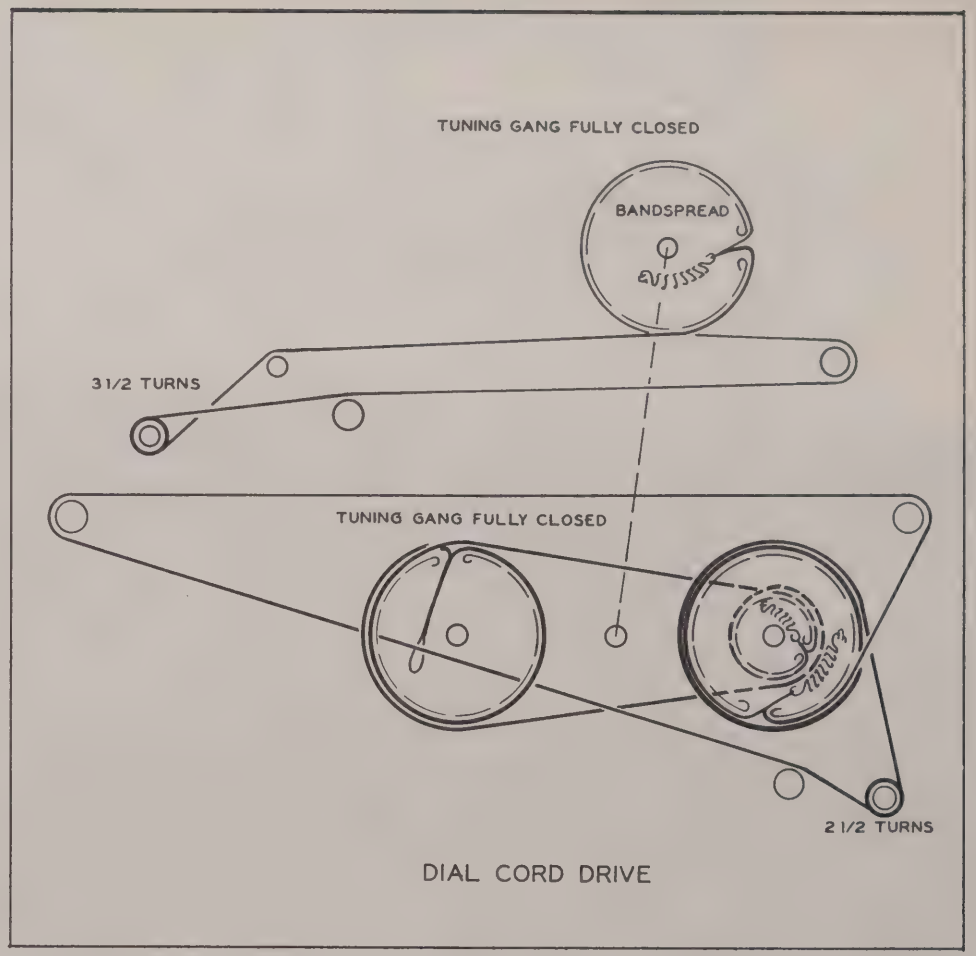
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

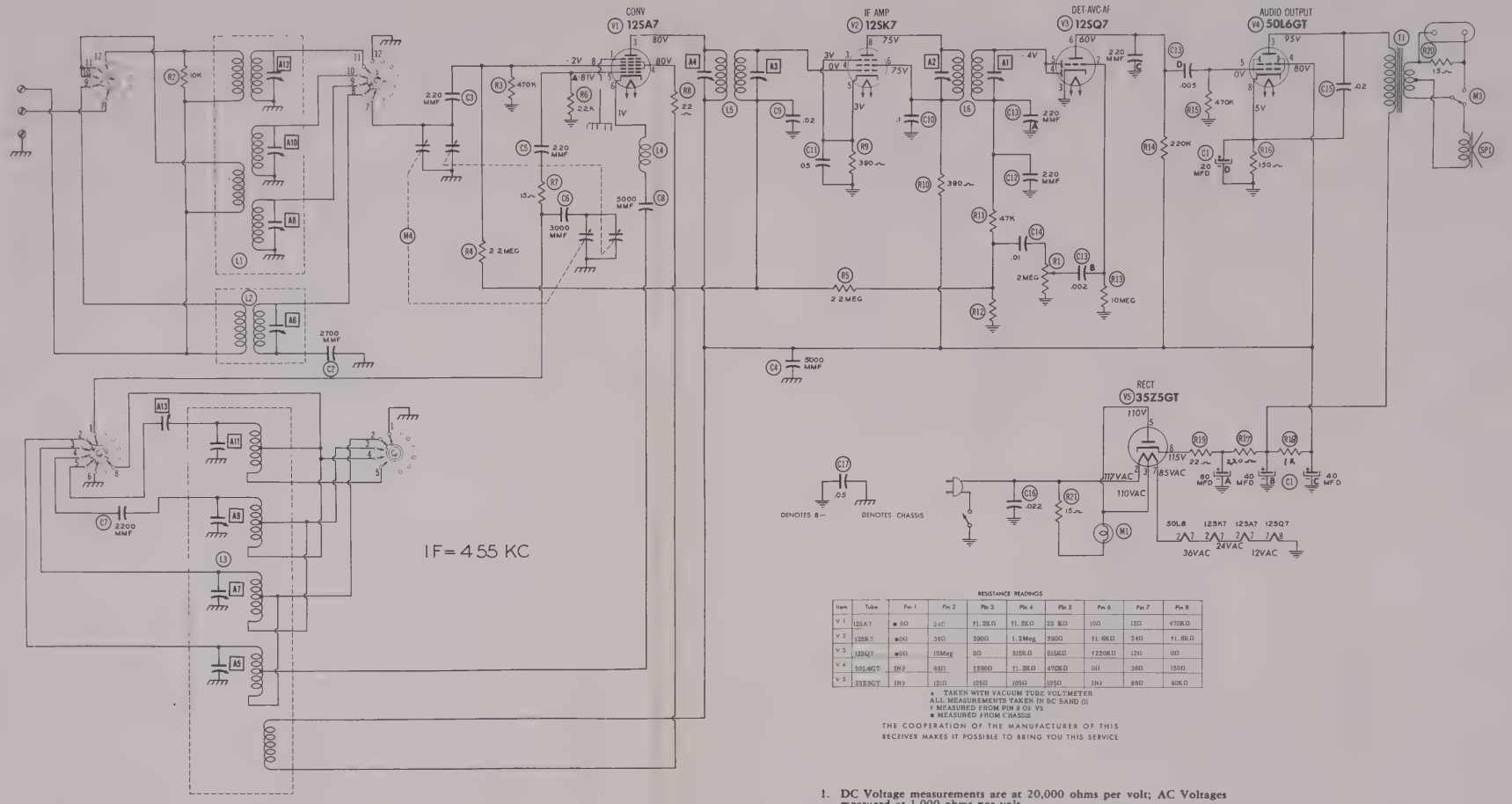
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Hallicrafters PART No.		
M1	Bayonet	6-8	.15	Brown	39A004		Type number 47.

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
M2	Switch	60C393	Band Selector
M3	Switch	60A243	Speaker
M4	2 Gang Var. Cap.	48-269	(16-440 MMF, 16-140 MMF)
A6	Trimmer	44A039	(3-77MMF) Ant. (Band #4)
A13	Trimmer	44A349	(525 MMF) Osc. Padder
	Cabinet	66-702	
	Dial Scale	22B318	
	Pointer	82A198	Bandspread
	Pointer	82A199	Main Tuning
	Knob	15B322	Bandspread, Off/Volume, Tuning
	Knob	15B323	Band Selector



DIAL CORD DRIVE



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	● 0Ω	24Ω	†1.2MΩ	†1.3MΩ	22 KΩ	10Ω	12Ω	470KΩ
V 2	12SK7	●0Ω	36Ω	390Ω	1.2Meg	390Ω	†1.6KΩ	24Ω	†1.6KΩ
V 3	12SQ7	●0Ω	10Meg	0Ω	515KΩ	515KΩ	†220KΩ	12Ω	0Ω
V 4	50L6GT	IN2	68Ω	†390Ω	†1.3KΩ	470KΩ	0Ω	36Ω	150Ω
V 5	35Z5GT	IN2	12Ω	105Ω	105Ω	105Ω	IN2	88Ω	40KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
ALL MEASUREMENTS TAKEN IN BC BAND (1)
† MEASURED FROM PIN 8 OF V5
● MEASURED FROM CHASSIS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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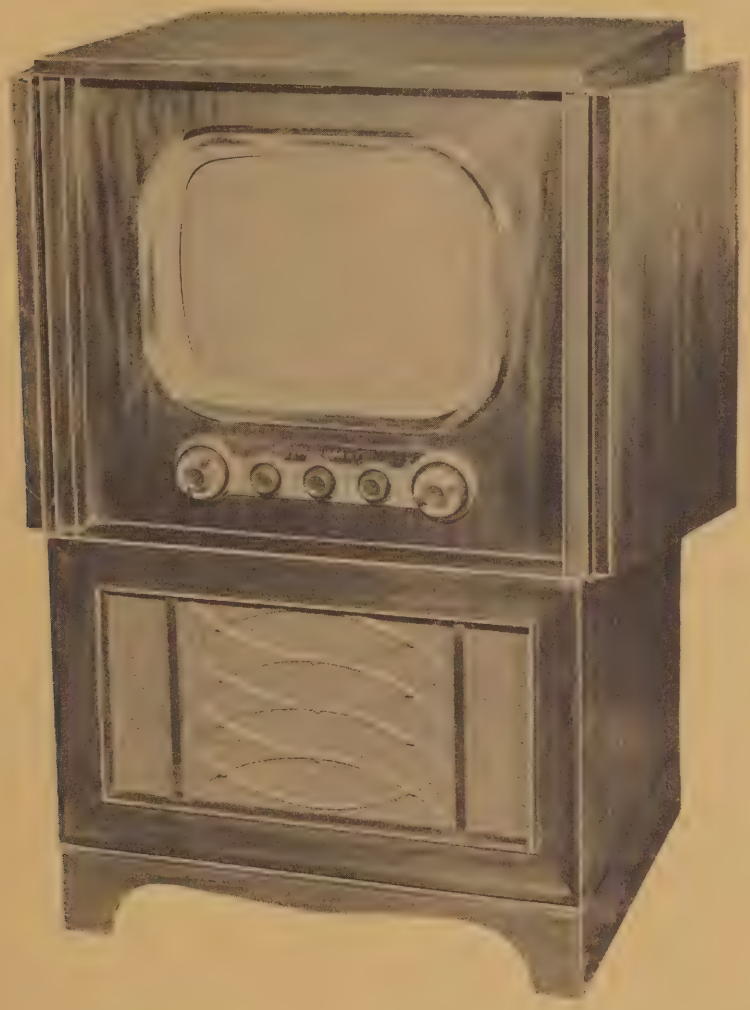

MODEL 17838

HALLICRAFTERS MODELS 17804C, 17812, 17813, 17814, 17815-H, 17819, 17824, 17838, 17848, 17849, 17850, 20882

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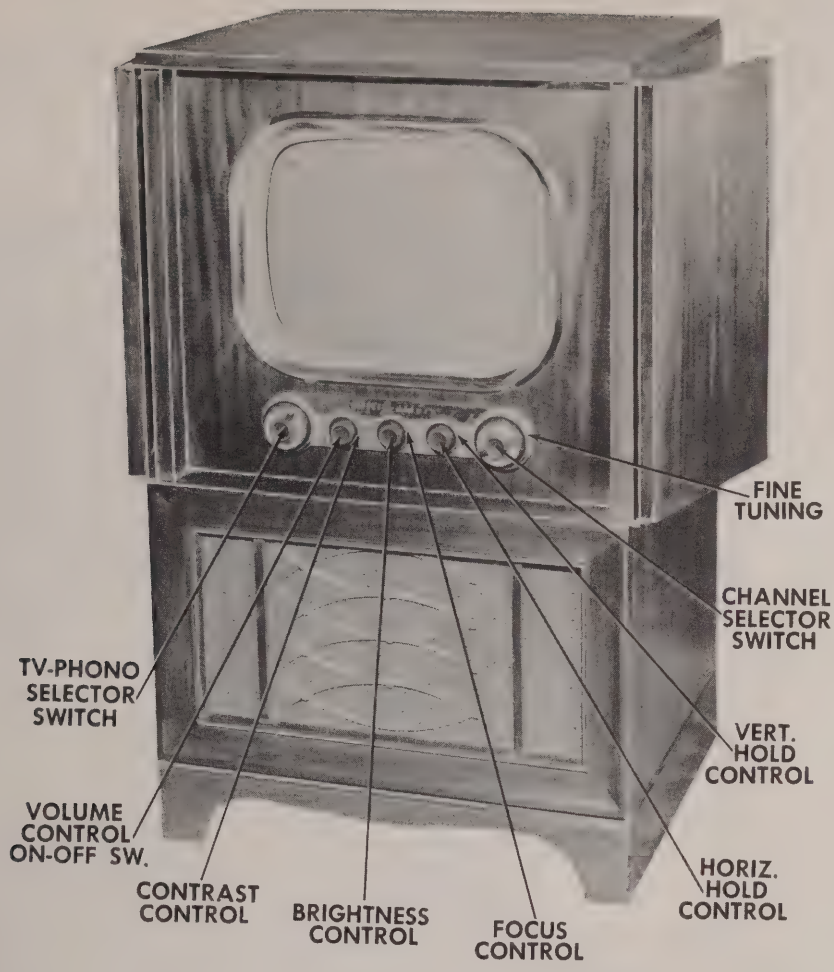

HALLICRAFTERS MODEL 17838

TRADE NAME	Hallicrafters Models 17804C, 17812, 17813, 17814, 17815-H, 17819, 17824, 17838, 17848, 17849, 17850, 20882
MANUFACTURER	Hallicrafters Co., Inc. 4401 W. 5th Ave., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty one
POWER SUPPLY	110-120Volts AC-60Cycle
RATING	1, 75Amp. @ 117Volts AC
TUNING RANGE-	Channels 2 thru 13

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet-Rear View 11
Capacitor and alignment identification 4, 9
Chassis-Top View 3
Photographs (cont.)
RF Tuner 10
Resistor and Inductor Identification 15, 16
Resistance Measurements 8
Schematic 2
Schematic (alternate tuner) 7
Tube Placement Charts 5

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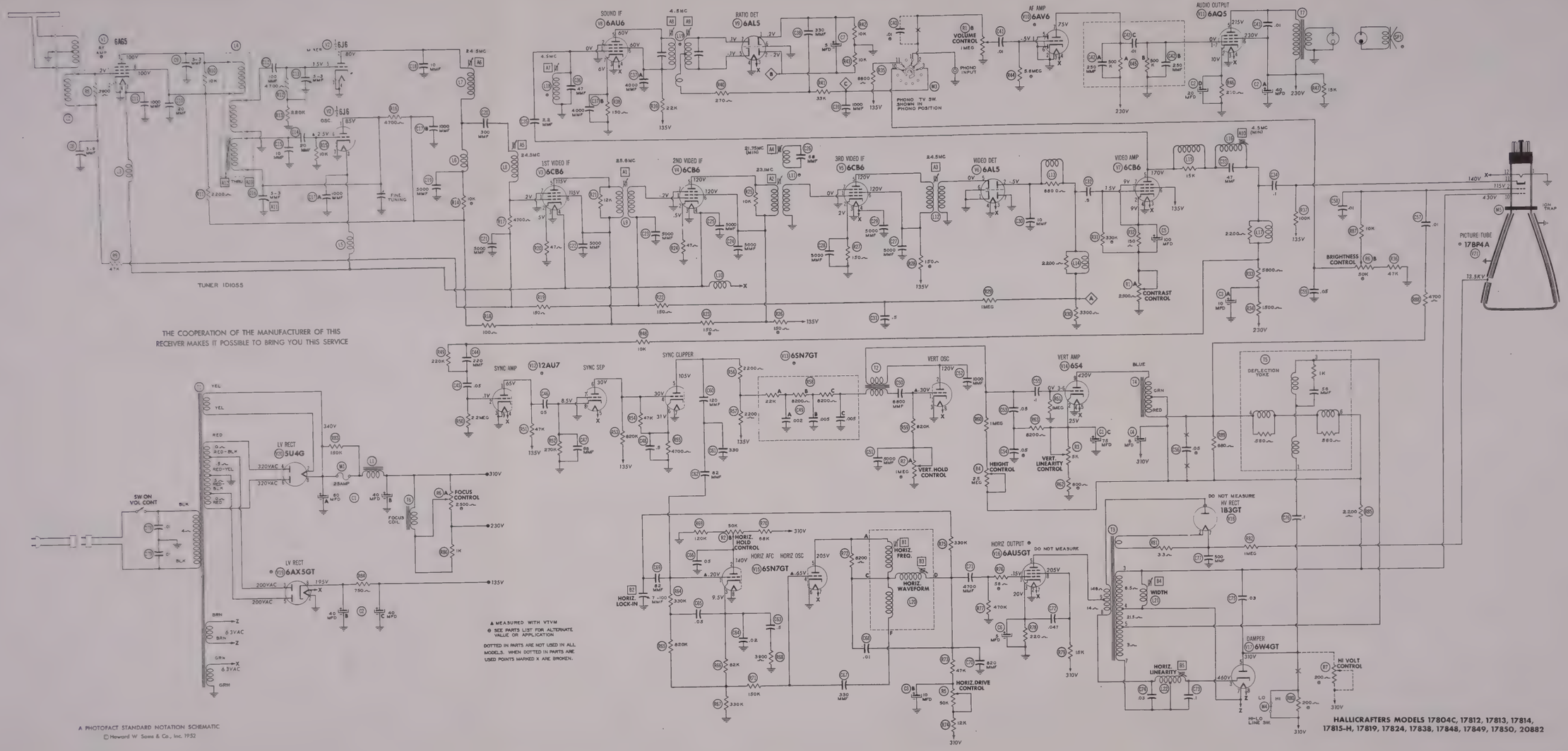
TUNER 1D1055
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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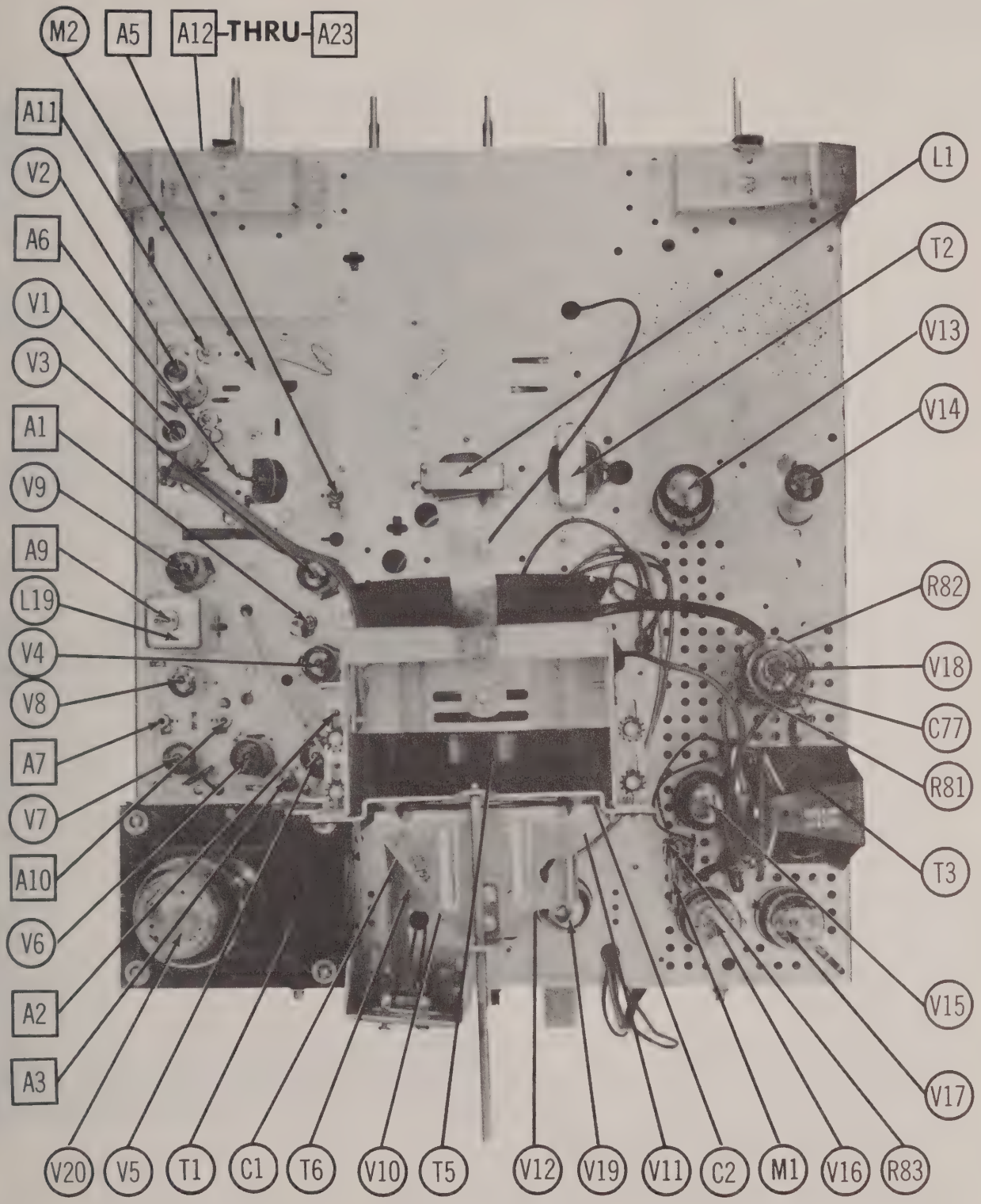
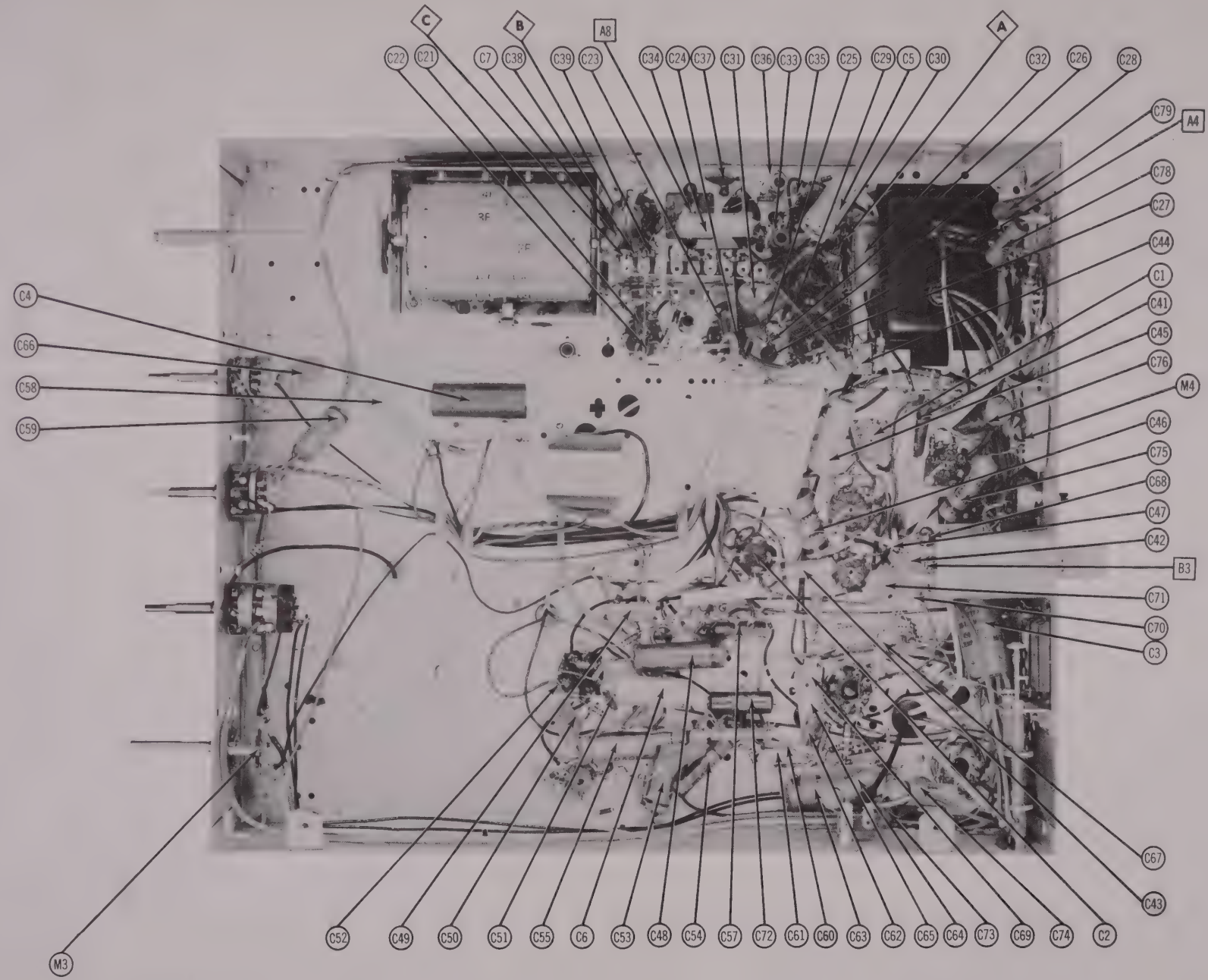


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

BOTTOM VIEW

TOP VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V15), from its socket.

VIDEO IF ALIGNMENT

These receivers employ one of two tuners, Hallicrafters part No. 1D1055 or Part Nos. 10961, 1A1077 & 1D1088. These tuners differ considerably in the converter plate circuit. Tuner 1D1055 has two single tuned coils, one mounted on the tuner proper, the other on the main chassis adjacent to the tuner. Tuners No. 1D961, 1A1077 & 1D1088 have a double tuned transformer mounted on the main chassis. The latter tuners have printed coils on the turret channel strips. Determine which tuner is in the set and proceed with the appropriate alignment.
Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possible the possibility of erroneous indications.

VIDEO IF ALIGNMENT FOR CHASSIS USING TUNER NO. 1D1055

During step 6 connect a 1000Ω resistor across R17. Remove the resistor after completing Step 6.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	25.6MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	23.1MC	"	"	A2	Adjust for maximum deflection.
3.	"	"	24.5MC	"	"	A3	Adjust for maximum deflection.
4.	"	"	21.75MC	"	"	A4	Adjust for MINIMUM deflection.
5.	"	"	24.5MC	"	"	A5, A6	Adjust for maximum deflection See Note above concerning A6.

VIDEO IF ALIGNMENT FOR CHASSIS USING TUNERS NO. 1D961, 1A1077 & 1D1088

During step 1 alternate loading of the first IF transformer is required. Connect a 1000Ω resistor across the secondary winding while adjusting the primary winding. Then move the resistor to across the primary winding while adjusting the secondary Remove the resistor after completing step 1.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24.75MC (Unmod.)	Any	DC probe to Point (A). Common to chassis.	A5, A6	Adjust for maximum deflection. See note above.
2.	"	"	25.6MC	"	"	A1	Adjust for maximum deflection
3.	"	"	23.1MC	"	"	A2	Adjust for maximum deflection
4.	"	"	24.5MC	"	"	A3	Adjust for maximum deflection
5.	"	"	21.75MC	"	"	A4	Adjust for MINIMUM deflection

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC swp.)	21.75MC 26.25MC	Any	Vert. amp. to Point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A1 thru A6 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD.	High side to Pin 1, (Grid), of 6CB6, (V7). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to Point (B). Common to chassis.	A7, A8	Adjust for maximum deflection.
8.	"	"	"	"	DC probe to Point (C). Common to chassis.	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD.	High side to Pin 1 (Grid) of 6CB6, (V7). Low side to chassis.	4.5 MC (450KC swp.)	4.5MC	Any	Vert. amp. to Point (B). Low side to chassis.	A7, A8	Disconnect stabilizor capacitor C7. Adjust for maximum amplitude and symmetry as per Fig. 2.
8.	"	"	"	"	"	Vert. amp. to Point (C). Low side to chassis.	A9	Adjust A9 so 4.5MC occurs at center of crossover lines as per Fig. 3. SLIGHTLY RETOUCH A8 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	.01MFD.	High side to Pin 1, (Grid), of 6CB6, (V7). Low side to chassis.	Not used	4.5MC (400% Mod.)	Any	Vert. amp. thru 47KΩ to Pin 11 of picture tube. Low side to chassis.	A10	Adjust for MINIMUM 400% indication on scope.

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT (ALL TUNERS)

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using All. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of All will not bring all channels well within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to Point (A). Low side to chassis.	A12	Adjust to place sound marker in "notch" as shown in Fig. 4. The video marker should be at 50%.
			207MC (10MC swp.)	205.25MC 209.75MC	12		A13	
			201MC (10MC swp.)	199.25 MC 203.75MC	11		A14	
			195MC (10MC swp.)	193.25MC 197.75MC	10		A15	
			189MC (10MC swp.)	187.25MC 191.75MC	9		A16	
			183MC (10MC swp.)	181.25MC 185.75MC	8		A17	
			177MC (10MC swp.)	175.25MC 179.75MC	7		A18	
			85MC (10MC swp.)	83.25MC 87.75MC	6		A19	
			79MC (10MC swp.)	77.25MC 81.75MC	5		A20	
			69MC (10MC swp.)	67.25MC 81.75MC	4		A21	
			63MC (10MC swp.)	61.25MC 65.75MC	3		A22	
			57MC (10MC swp.)	55.25MC 59.75MC	2		A23	

THE RF & MIXER PORTION OF THESE TUNERS HAVE BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THESE PORTIONS SHOULD NOT BE REQUIRED IN THE FIELD.

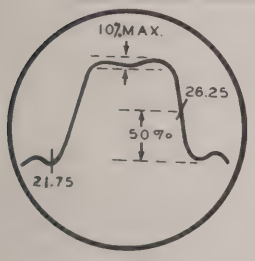


FIG. 1

FIG. 2

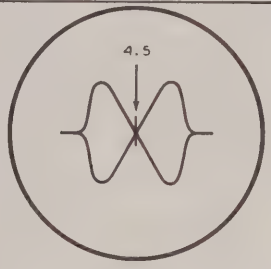


FIG. 3

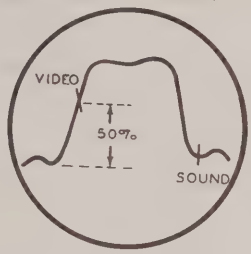
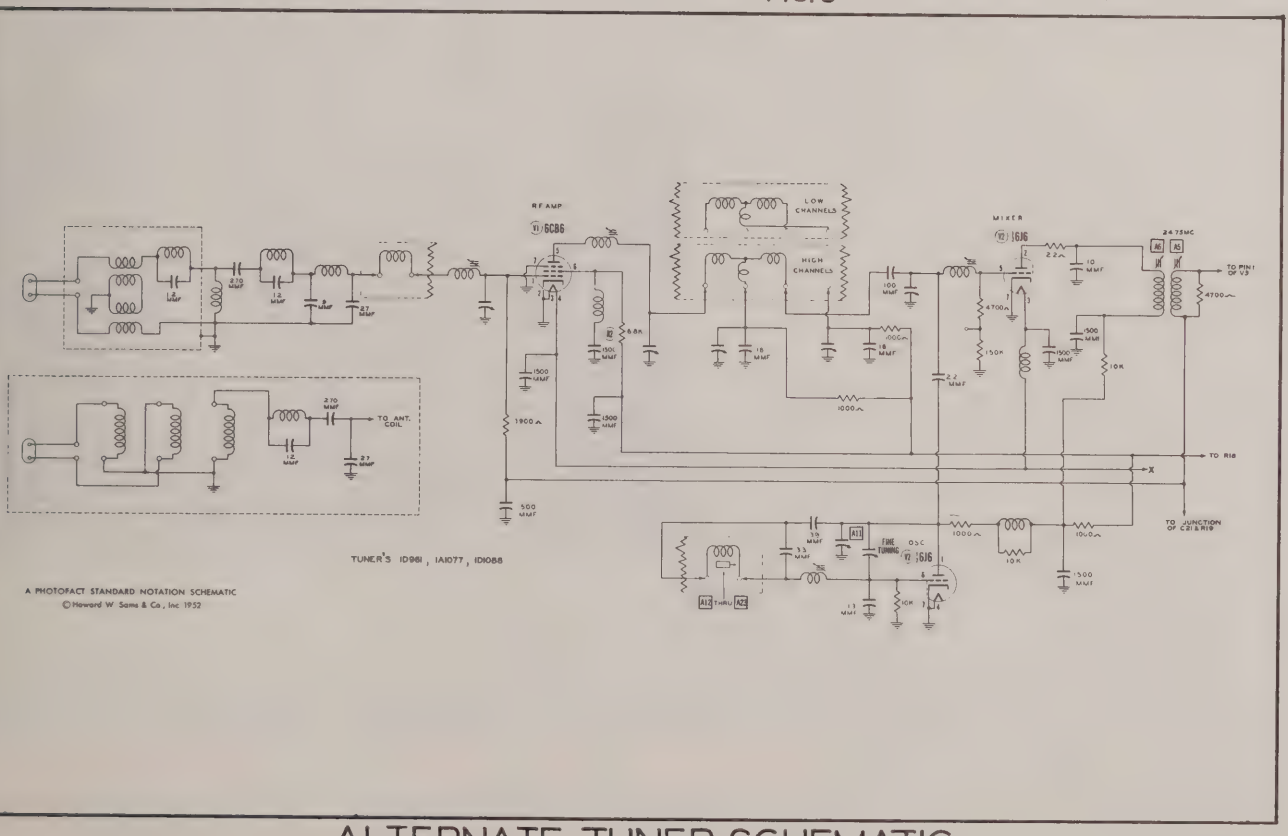


FIG. 4



ALTERNATE TUNER SCHEMATIC

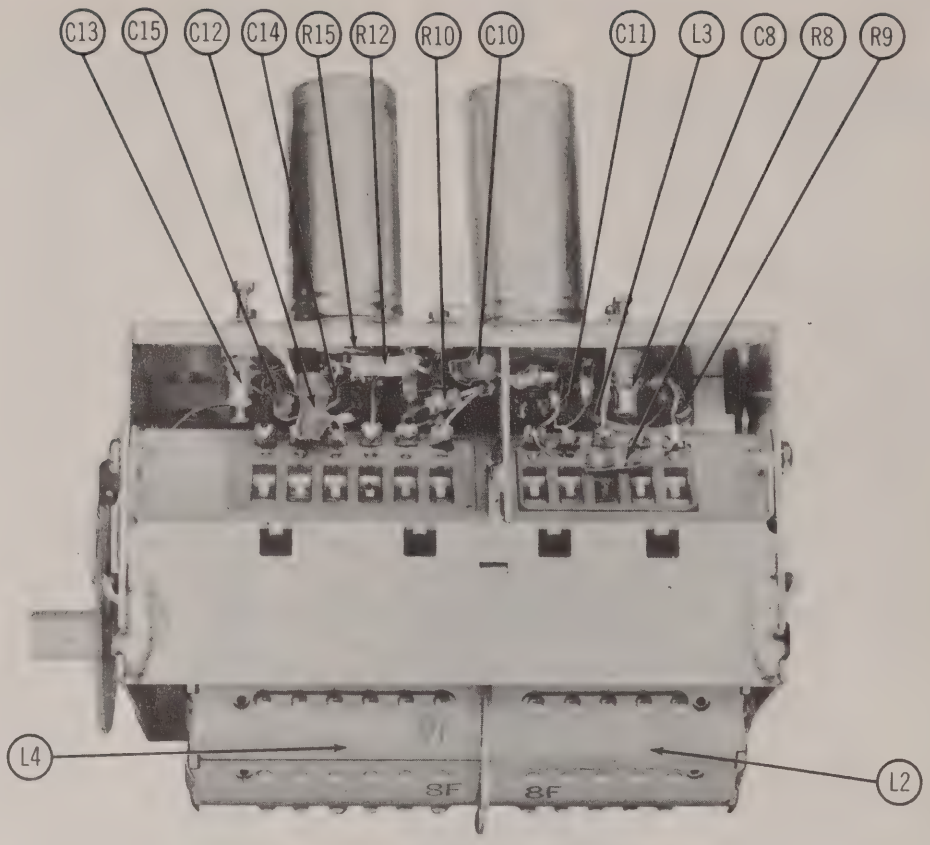
RESISTANCE MEASUREMENTS

RESISTANCE READINGS

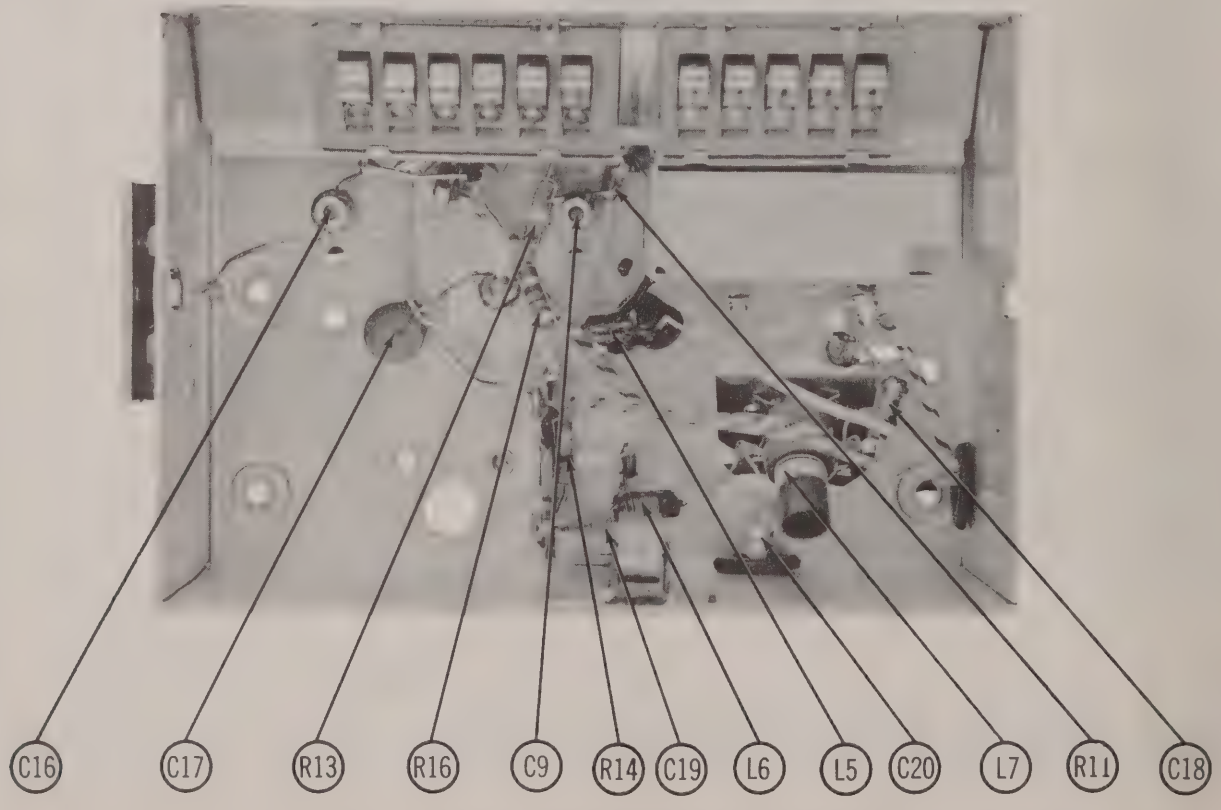
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	1Meg	0Ω	.1Ω	0Ω	■3.3KΩ	■3.3KΩ	0Ω		
V 2	6J6	■5.8KΩ	■11KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	1Meg	47Ω	0Ω	.1Ω	■1KΩ	■1KΩ	0Ω		
V 4	6CB6	1Meg	47Ω	0Ω	.1Ω	■900Ω	■900Ω	0Ω		
V 5	6CB6	.2Ω	150Ω	0Ω	.1Ω	■900Ω	■900Ω	0Ω		
V 6	6AL5	0Ω	3.3KΩ	.1Ω	0Ω	.3Ω	0Ω	0Ω		
V 7	6CB6	330KΩ	700Ω	.1Ω	0Ω	†8.3KΩ	■750Ω	700Ω		
V 8	6AU6	1.1Ω	0Ω	0Ω	.1Ω	■22KΩ	■22KΩ	150Ω		
V 9	6AL5	10KΩ	10KΩ	.1Ω	0Ω	1Meg	0Ω	1Meg		
V 10	6AV6	5.6Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†500KΩ		
V 11	6AQ5	500KΩ	270Ω	0Ω	.1Ω	†1.4KΩ	†1.1KΩ	500KΩ		
V 12	12AU7	■47KΩ	2.2Meg	0Ω	.1Ω	.1Ω	■60KΩ	0Ω	270KΩ	0Ω
V 13	6SN7GT	1.2Meg	#1.6Meg	0Ω	50KΩ	■5.1KΩ	4.7KΩ	0Ω	.1Ω	
V 14	6S4	Inf.	2.9KΩ	1Meg	0Ω	.1Ω	1Meg	Inf.	Inf.*	#3.4KΩ
V 15	6SN7GT	1.5Meg	†80KΩ	410KΩ	480KΩ	†60KΩ	0Ω	.1Ω	0Ω	
V 16	6AU5GT	470KΩ	0Ω	220Ω	Inf.	#23Ω	Inf.	.1Ω	†15KΩ	
V 17	6W4GT	Inf.	Inf.	190KΩ	Inf.	†85Ω	Inf.	#22Ω	#22Ω	
V 18	1B3GT	PINS 1 THROUGH 8 HAVE INF RESISTANCE								TOP CAP #165Ω
V 19	6AX5GT	#30Ω	0Ω	15Ω	Inf.	15Ω	#30Ω	.1Ω	50KΩ	
V 20	5U4G	Inf.	13KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	13KΩ	
V 21	17BP4A	0Ω	■25KΩ	PIN 10 #2.2KΩ	PIN 11 ■100KΩ	PIN 12 .1Ω				

ALL CONTROLS SET FOR NORMAL OPERATION
TV-PHONO SWITCH IN TV POSITION
■ MEASURED FROM PIN 8 OF V 19
† MEASURED FROM PIN 8 OF V 20

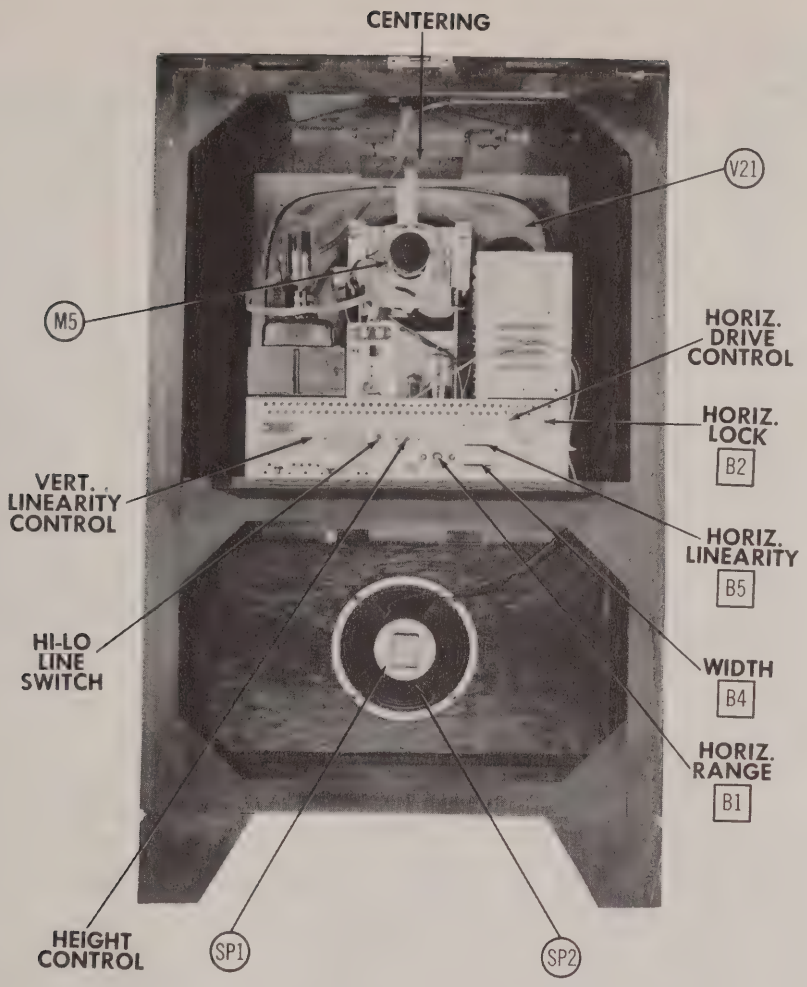
ALL MEASUREMENTS TAKEN WITH HI-LOW LINE SW IN LOW POSITION



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station preferably a test pattern.
Turn the horizontal hold control to fully clockwise.
Adjust the horizontal frequency slug, (B1), until the blanking bar appears in the picture as a single vertical bar.
Turn the hold control to fully counter clockwise and momentarily interrupt the signal by switching to another channel and back again. There should be three or four sloping bars in the picture. If there are more than four bars turn the horizontal lock trimmer (B2), slightly clockwise. If less than three bars are present turn B2 slightly counter clockwise.
Repeat the above procedure until three or four sloping bars are present with the hold control at fully counter clockwise.
If stable synchronization cannot be obtained as outlined above proceed with the following waveform adjustment.
Connect the vertical input lead of an oscilloscope thru a 47KΩ resistor to terminal C of L20.
Adjust the waveform slug , (B3), until the broad and narrow peaks of the waveform on the scope are of equal height as shown in Fig. 5. If necessary, during adjustment of B3, adjust B1 to keep the picture synchronized.
Repeat the check of horizontal oscillator and repeat any steps necessary to obtain proper synchronization.
Adjust the horizontal drive control clockwise until a white vertical line appears in the picture , then counter-clockwise to just past the point where the white line disappears.
Adjust the width slug , (B4) until the picture is slightly wider than necessary to fill the mask horizontally .
If proper width cannot be obtained within the range of the width slug, switch the high-low line switch to the position which gives proper width.
Adjust the horizontal linearity slug, B5), until the picture is symmetrical from left to right.

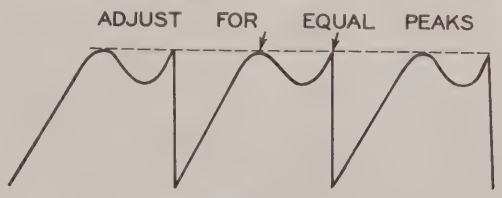


FIG. 5

DISASSEMBLY INSTRUCTIONS

1. Remove nine control knobs from front of cabinet.
2. Remove wood screws from rear cover. Remove cover.
3. Disconnect built-in antenna.
4. Disconnect speaker.
5. Remove four bolts holding chassis. Remove chassis from cabinet.
6. Remove four nuts holding speaker in cabinet. Remove speaker.
7.

NOTE: TO REMOVE PICTURE TUBE IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: Hallicrafters PART No	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	90X6AG5	6AG5	7BD	
B	RF Amplifier	90X6UB6	6CB6	7CM	
V2	Converter	90X626	6J6	7BF	
V3	1st. Video IF Amp.	90X6CB6	6CB6	7CM	
V4	2nd. Video IF Amp	90X6UB6	6CB6	7CM	
V5	3rd. Video IF Amp	90X6CB6	6CB6	7CM	
V6	Video Detector	90X6AL5	6AL5	6BT	
V7	Video Amplifier	90X6CB6	6CB6	7CM	
V8	Sound IF Amp.	90X6AU6	6AU6	7BK	
V9	Ratio Detector	90X6AL5	6AL5	6BT	
V10A	AF Amplifier	90X6AV6	6AV6	7BT	
B	AF Amplifier	90X6SQ7	6SQ7	8Q	
V11	Audio Output	90X6AQ5	6AQ5	7BZ	
V12A	Sync. Amplifier Sync. Separator	90X12AU7	12AU7	9A	
B	Sync. Amplifier Sync. Separator	90X6SN7GT	6SN7GT	8BD	
V13A	Sync. Clipper Vert. Oscillator	90X6SN7GT	6SN7GT	8BD	
B	Sync. Clipper Vert. Oscillator	90X12AU7	12AU7	9A	
V14	Vert. Amplifier	90X6S4	6S4	9AC	
V15	Horiz. AFC-Horiz. Oscillator	90X6SN7GT	6SN7GT	8BD	
V16A	Horiz. Output	90X6AU5GT	6AU5GT	7BK	
B	Horiz. Output	90X6AV5GT	6AV5GT	6CK	
V17	Damper	90X6W4GT	6W4GT	4CG	
V18	HV Rectifier	90X1B3GT	1B3GT	3C	
V19A	LV Rectifier	90X6AX5GT	6AX5GT	6S	
B	LV Rectifier	90X6X5GT	6X5GT	6S	
V20	LV Rectifier	90X5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: Hallicrafters PART No	REPLACEMENT DATA: SYLVANIA PART No	REPLACEMENT DATA: THOMAS PART No	RTMA BASE TYPE	NOTES
V21A	17BP4A	17BP4A	17BP4	12D	
V21B	20CP4	20CP4	20CP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Hallicrafters PART No	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: [illegible] PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	60	450	45B173	AFH 2-61		UPT62245		TVL-2770	▲ Filter
B	40	450		PRS50/100		BRH501		TVA-1310	■ Filter
C	75	50							▲ Vert. Amp. Dec.
C2A	40	250	45B174	AFH-3-133		UPT4445C		TVL-4739	■ Filter
B	40	250		PRS250/40		BR4025			▲ Filter
C	40	450							▲ Audio Output Dec.
D	20	25							▲ Audio Output Cathode
C3A	10	450	45A172	PRS450/10-10		BRDU145A		TVA-2722	Decoupling
B	10	450							Decoupling
C4	8	450	45A103	PRS500, 8		BR850A		TVA-1902	Decoupling
C5	100	10	45B170	PRS12, 100		BRH121A		TVA-1130	Video Amp. Cathode
C6	5	50	45B175	PRS150, 4		BR550		TVA-1303	Horiz. Output Cathode
C7	5	50	45B175	PRS150, 4		BR550		TVA-1303	Stabilizing
C8	3-9				[illegible]				Variable Trimmer
C9	3-9				829-3				Variable Trimmer
C10	120			SU20	D6-121		GP2K-121	5GA-T12	RF Amp. Decoupling
C11	1000			SD000	D6-102		GP2L-102	5HK-D1	RF Amp. Filament
C12	100			SD00	GP1K-121		GP1K-121	5GA-T1	RF Coupling
C13	3-9				829-3				Variable Trimmer
C14	20			SD20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C15	10			SD0N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C16	3-9				829-3				Variable Trimmer
C17A	1000			BPD-2X001	DD-2-102		B12-001	5HK-2D1	Conv. Filament RF Bypass
B	1000								
C18	20			SD0NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C19	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	RF Bypass
C20	300			SI300	D6-301		GP2K-331	5GA-T33	IF Coupling
C21	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	AGC Filter
C22	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	1st Video IF Dec.
C23	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	AGC Filter
C24	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	2nd. Video IF Dec.
C25	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	2nd. Video IF Filament
C26	68						N750K-680	5TCU-Q68	Fixed Trimmer
C27	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	3rd. Video IF Dec.
C28	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	3rd. Video IF Cathode
C29	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	3rd. Video IF Filament
C30	10		47B20100K5	SI10	D6-100	5W5Q1	GP1K-100	5GA-Q1	Video Det. Filter
C31	.5	25	46A122	P288-5		GT2P5		2TM-P5	AGC Filter
C32	.5	25	46A177	P288-5		GT2P5		2TM-P5	Video Coupling
C33	47			SI47N750	TCN-47		N750K-470	5TCU-Q47	Fixed Trimmer
C34	.1	200	46AU104J	P288-1	DF-104	PTE4P1		2TM-P1	Video Coupling
C35	2.2		47A160-4		TCZ-2.2		NP0K-2R2		Sound IF Coupling
C36	47			SI47N750	TCN-47		N750K-470	5TCU-Q47	Fixed Trimmer
C37A	4000		47A218	BPD-2X004	D6-402	1D5D4	B22-004	5HK-2D4	Sound IF Dec.
B	4000				D6-402	1D5D4			Sound IF Cathode
C38	330		47B20331K5	SI330	D6-331		GP2K-331	5GA-T33	Diode Load Cap.
C39	1000		47B20A102M5	SI000	D6-102	1W5D1	GP2L-102	5HK-D1	De-Emphasis
C40	.01	600	46A4103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling •
C41	.01	600	46AY103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C42A	250								AF Amp. Plate
B			†49A017		†PC-80		†101C2		Audio Output Grid
C	.01								Audio Coupling
C43	.01	600	46AY103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Output Plate
C44	220	500	47X20B221K	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	Sync. Coupling
C45	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C46	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C47	68		47B20680K5	SI68	D6-680	5W5Q7	GP1K-680	5GA-Q68	Sync. Sep. Cathode
C48	.5	200	46AT504J	P288-5		GT2P5		2TM-P5	Sync. Clipper Cathode

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C49A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net
B	.005		•49A015	P688-005	•PC-100	PTE6D5	GP2-333-502	•101C1	Vert. Integrator Net
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net
C50	6800	500	47X35B682K					MS-27	Vert. Osc. Grid Cap.
C51	5000		47A168	BPD-005	DD-502	1D5D5	81L-005	5HK-D5	Vert. Hold Bypass
C52	1000		47B20A102M5	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Vert. Osc. Plate
C53	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Vert. Discharge
C54	.05	200	46AU503J	P288-05	DF-503	PTE4S5		2TM-S5	Voltage Divider *
C55	.1	600	46AX104J	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C56	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	Fixed Trimmer *
C57	.01	600	46AY103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Vert. Sweep Coupling
C58	.01	600	46AY103J	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Integrator Net
C59	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	RF Bypass
C60	120	500	47X20B121K	1468-00015	D6-121	5W5T15	GP2K-121	1FM-315	Horiz. Sync. Coupling
C61	330	500	47X20B331K	1469-00035					Voltage Divider
C62	82	500	47X20B820K						Horiz. Sync. Coupling
C63	.5	200	46AT504J	P288-5		GT2P5		2TM-P5	AFC Filter
C64	.02	600	46AY203J	P688-02	DF-203	PTE6S2		6TM-S2	AFC Filter
C65	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	AFC Filter
C66	.05	600	46AY503J	P688-05	DF-503	PTE6S5		6TM-S5	AFC Plate
C67	330	500	47X20B331K	1469-00035					Horiz. Osc. Grid
C68	.01	400	46BR103E4	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Fixed Trimmer
C69	82	500	47X20B820K						Horiz. FeedBack
C70	820	500	47X25B821K						Horiz. Discharge
C71	4700	500	47X35B472K	1467-005	D6-472	1D5D5	GP2-333-472	1FM-25	Horiz. Sweep Coupling
C72	.047	600	46AY503J	P688-047	DF-503	PTE6S5		6TM-S47	Horiz. Output Screen
C73	.1	600	46AX104J	P688-1	DF-104	PTE6P1		6TM-P1	Damper Filter
C74	.03	600	46AY303J	P688-03		PTE6S3		6TM-S3	Damper Filter
C75	.03	600	46AY303J	P688-03		PTE6S3		6TM-S3	Horiz. Sweep Coupling
C76	.1	600	46AX104J	P688-1	DF-104	PTE6P1		6TM-P1	Horiz. Sweep Coupling
C77	500	20000	47A223	BV20C	TV3-502				HV Filter
C78	.01	600	46BR103J6	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C79	.01	600	46BR103J6	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter

* Not Used In All Models
† Items C42A, C42B, C42C, R45A, R45B are combined in one unit.
When replacing with Separate components C42A and C42B should total 250MMF
• Items C49A, C49B, C49C, R58A, R58B, R58C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	2500Ω	½		Concentrikit			
B	1 Meg		25B896	B17-111 *	RTV-234	SBB-614-S	Volume Control Switch - Rear
C	Shaft end			B13-137 *			Attach per instructions in "Concentrikit"
D	Switch			S202 *			Attach per instructions in "Concentrikit"
				76-1 *			
R2A	1 Meg	½		Concentrikit			
B	50KΩ		25B917	B11-137 *	RTV-40	SBB-688	Vertical Hold Control - Panel See Note 1
C	Shaft end			B11-123 *			Horizontal Hold Control - Rear
R3A	5000Ω	½	25B712	E-187 *	AM-19-S	AN-10	Attach per instructions in "Concentrikit"
B	Shaft			Q11-114	FKS-1/4	AK-1	Vertical Linearity Control
R4A	2.5 Meg	½	25B711	Not Req.	Q11-239	AG-84-S	Attach to R3A per instructions
B	Shaft			Q11-123	FKS-1/4	AK-1	Height Control
R5A	50KΩ	½	25A858	Not Req.	AG-44-S	AN-31	Attach to R4A per instructions
B	Shaft			Q11-123	FKS-1/4	AK-1	Horizontal Drive Control
R6A	2500Ω	2	25B895		RTV-235		Attach to R5A per instructions
B	50KΩ	½		Not Req.	FKS-1/4	AK-1	Focus Control-Panel-Wire Wound See Note 2
R7	200Ω	2	25B714	W-200	43-200	VK-123	Brightness Control - Rear
							High voltage control - Wire Wound See Note 3

* Additional Parts to be used with "Concentrikit"
Note 1 Some Models use Control Part No. 25B916
Note 2 Some Models use Control Part No. 25B889
Note 3 This control not used in all Models

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R8	3900Ω	½	23X20X392K	BTS-3900	Antenna Coil Shunt
R9	47KΩ		23X20X473K	BTS-47K	AGC Network
R10	10KΩ		23X20X103K	BTS-10K	RF Coil Shunt
R11	2200Ω		23X20X222K	BTS-2200	RF Amplifier Decoupling
R12	4700		23X20X472K	BTS-4700	Mixer Grid
R13	220KΩ		23X20X224K	BTS-220K	Mixer Grid
R14	10KΩ		23X20X103K	BTS-10K	Mixer Decoupling See Note 1
R15	10KΩ		23X20X103K	BTS-10K	Oscillator Grid
R16	4700Ω		23X20X472K	BTS-4700	Oscillator Plate Load
R17	4700Ω		23X20X472K	BTS-4700	1st. Video IF Grid
R18	100Ω		23X20X101K	BTS-100	Decoupling
R19	150Ω		23X20X151K	BTS-150	AGC Network
R20	47Ω		23X20X470K		1st. Video IF Cathode
R21	12KΩ		23X20X123K	BTS-12K	Video IF Coil Shunt
R22	150Ω		23X20X151K	BTS-150	AGC Network
R23	150Ω		23X20X151K	BTS-150	Decoupling See Note 2
R24	47Ω		23X20X470K		2nd Video IF Cathode
R25	10KΩ		23X20X103K	BTS-10K	Video IF Coil Shunt
R26	150Ω		23X20X151K	BTS-150	Decoupling See Note 2
R27	150Ω		23X20X151K	BTS-150	3rd. Video IF Cathode
R28	150Ω		23X20X151K	BTS-150	3rd. Video IF Decoupling See Note 2
R29	1 Meg		23X20X105M	BTS-1Meg	AGC Network
R30	3300Ω		23X20X332K	BTS-3300	Video Detector Diode Load
R31	330KΩ		23X20X334K	BTS-330K	Video Amplifier Grid See Note 3
R32	150Ω		23X20X151K	BTS-150	Video Amplifier Cathode
R33	5600Ω	2	23X40X562K	BTB-5600	Video Amplifier Plate Load
R34	1500Ω		23X20X152K	BTS-1500	Video Amplifier Plate Decoupling
R35	6800Ω		23X20X682K	BTS-6800	Voltage Divider
R36	47KΩ		23X20X473K	BTS-47K	Voltage Divider
R37	100KΩ		23X20X104M	BTS-100K	Picture Tube Cathode
R38	150Ω		23X20X151K	BTS-150	Sound IF Cathode
R39	22KΩ 20%		23X20X224K	BTS-22K	Sound IF Decoupling
R40	270Ω		23X20X271K	BTS-270	Balancing
R41	33KΩ		23X20X333K	BTS-33K	De-Emphasis
R42	10KΩ 5%		23X20X103J	BTS-10K 5%	Ratio Detector Diode Load
R43	10KΩ 5%		23X20X103J	BTS-10K 5%	Ratio Detector Diode Load

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R44	5.6 Meg	½	23X20X565K	BTS-5.6Meg	Audio Amplifier Grid See Note 4
R45A	500KΩ	½	49A017 ♦	BTS-470K	Audio Amplifier Plate Load
B	500KΩ	2		BTS-470K	Audio Output Grid
R46	270Ω	1	23X30X271K	BTA-270	Audio Output Cathode
R47	15KΩ	10	24A922	1 3/4A-15K	Bleeder Wire Wound
R48	10KΩ	½	23X20X103K	BTS-10K	Isolation
R49	220KΩ	½	23X20X224M	BTS-220K	Isolation
R50	2.2Meg	½	23X20X225M	BTS-2.2Meg	Sync. Amplifier Grid
R51	47KΩ	½	23X20X473K	BTS-47K	Sync. Amplifier Plate Load
R52	270KΩ	½	23X20X274M	BTS-270K	Sync. Separator Cathode
R53	820KΩ	½	23X20X824M	BTS-820K	Sync. Separator Plate Load
R54	47KΩ	½	23X20X473K	BTS-47K	Sync. Clipper Grid
R55	4700Ω	½	23X20X472K	BTS-4700	Sunc. Clipper Cathode
R56	2200Ω	½	23X20X222K	BTS-2200	Sync. Clipper Plate Load
R57	2200Ω	½	23X20X222K	BTS-2200	Sync. Clipper Plate Load
R58A	22KΩ	½		BTS-22K	Integrator Network
B	8200Ω	½	49A015 †	BTS-8200	Integrator Network
C	8200Ω	½		BTS-8200	Integrator Network
R59	820KΩ	½	23X20X824K	BTS-820K	Vertical Oscillator Grid See Note 5
R60	1 Meg	1	23X30BF105M	BTA-1Meg	Vertical Oscillator Plate Load
R61	1 Meg 20%	1	23X30X105M	BTS-1Meg	Vertical Output Grid
R62	800Ω	1	23X30X801K	BTA-820	Vertical Output Cathode See Note 6
R63	8200Ω	½	23X20X824K	BTS-8200	Vertical Peaking
R64	330KΩ 5%	½	23X20X334K	BTS-330K	Horizontal AFC Grid
R65	820KΩ	½	23X20X824K	BTS-820K	Horizontal AFC Grid
R66	82KΩ	½	23X30X823K	BTA-82K	Horizontal AFC Cathode
R67	330KΩ 5%	1	23X30BF334J	BTA-330K 5%	Horizontal AFC Cathode
R68	3900Ω	½	23X20X392K	BTS-3900	Horizontal AFC Filter
R69	120KΩ	1	23X20BF124K	BTA-120K	Voltage Divider
R70	68KΩ	½	23X20X683K	BTS-68K	Voltage Divider
R71	150KΩ	½	23X20X154K	BTS-150K	Horizontal Oscillator Grid
R72	8200Ω	½	23X20X824K	BTS-8200	Horizontal Oscillator Coil Shunt
R73	47KΩ	1	23X30BF473K	BTA-47K	Horizontal Oscillator Plate Load
R74	12KΩ	½	23X20X123K	BTS-12K	Horizontal Oscillator Plate Load
R75	330KΩ	½	23X20X334K	BTS-330K	Horizontal AFC Filter
R76	56Ω	½	23X30X560K		Parasitic Suppressor See Note 7
R77	470KΩ	½	23X20X474M	BTS-470K	Horizontal Output Grid
R78	220Ω	3	24A925		Horizontal Output Cathode Wire Wound
R79	15KΩ	2	23X40X153K	BTB-15K	Horizontal Output Screen
R80	200Ω	5	24A926	1 3/4A-200	Damper Plate Wire Wound See Note 8
R81	3.3Ω	½	23X20033K		HV Rectifier Filament
R82	1 Meg	1	23X30X105M		HV Filter
R83	150KΩ	½	23X20X154M	BTS-150K	Fuse Shunt
R84	750Ω	10	24A920	1 3/4A-750	Filter Wire Wound
R85	2200Ω	1	23X30X222X	BTA-2200	Decoupling
R86	1000Ω	5	24A921	1 3/4A-1000	Focus Coil Shunt Wire Would
R87	10KΩ	½	23X20X103K	BTS-10K	Picture Tube Grid
R88	4700Ω	½	23X20X472K	BTS-4700	Integrator Network
R89	680Ω 20%	½	23X20X681M	BTS-680	Integrator Network

Note 1 Some Models may use a 15KΩ Resistor in this application
Note 2 Some Models may use a 100Ω Resistor in this application
Note 3 Some Models may use a 220KΩ Resistor in this application
Note 4 Some Models may use a 10 Meg Resistor in this application
† Items C42A, C42B, C42C, R45A & R45B are combined in one unit
♦ Items C49A, C49B, C49C, R58A, R58B &R58C are combined in one unit
Note 5 Some Models may use a 1 Meg Resistor in this application
Note 6 Some Models may use a 1000Ω Resistor in this application
Note 7 Some Models may use a 47Ω Resistor in this application
Note 8 Some Models may use a High Voltage Control in this application

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 1.75A	620VCT @ .190A tapped@ 400VCT @ .08A	5VAC @ 3.0A	6.3VAC @ 8.7A SEC. 4 6.3VAC @ 1.2A	52C204			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	190Ω	1.4KΩ	55C115	A-8111	A-3000		Vert. Blocking Osc.
T3	162Ω Tapped @ 14Ω	32Ω Tapped @ 8.5Ω & 29Ω SEC. 2 0Ω	55C149				Horizontal Output
T4	1.6KΩ Tapped @ 4Ω		55B151		A-3039		Vertical Output
T5A	18Ω		53C197	DY-8	MDF-70		Horiz. Deflection Coils
B	45Ω						Vert. Deflection Coils
T6A	800Ω		51B1246				Focus Coil
B			51A1287 ②				② Used in model 20882

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Hallicrafters PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	4.1KΩ	3.3Ω	280Ω	.5Ω	55B150	A-3877①	A-2930	RO-9	① Use Mounting Slots provided

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V.C.IMP.				
SP1A	PM	3.3Ω	85C104	ST-115 Mod. P8-V	8A31	
B	PM	2.9Ω	85C103	ST-105 Mod. P5-X	5A1	Used in Models 17804C, 17812, 17813, 17815-H, & 17819
C			85C106			Used in Model 20882
	CONE DIA.	V.C.DIA.				
SP2A	7 1/2"	9/16"				
B	4 3/4"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.190A	85Ω	1.3Henries	56C116	C-1411 ②	C-2994 ②	TR-3000 ②	② Drill One New Mounting Hole.

COILS (RF-IF)

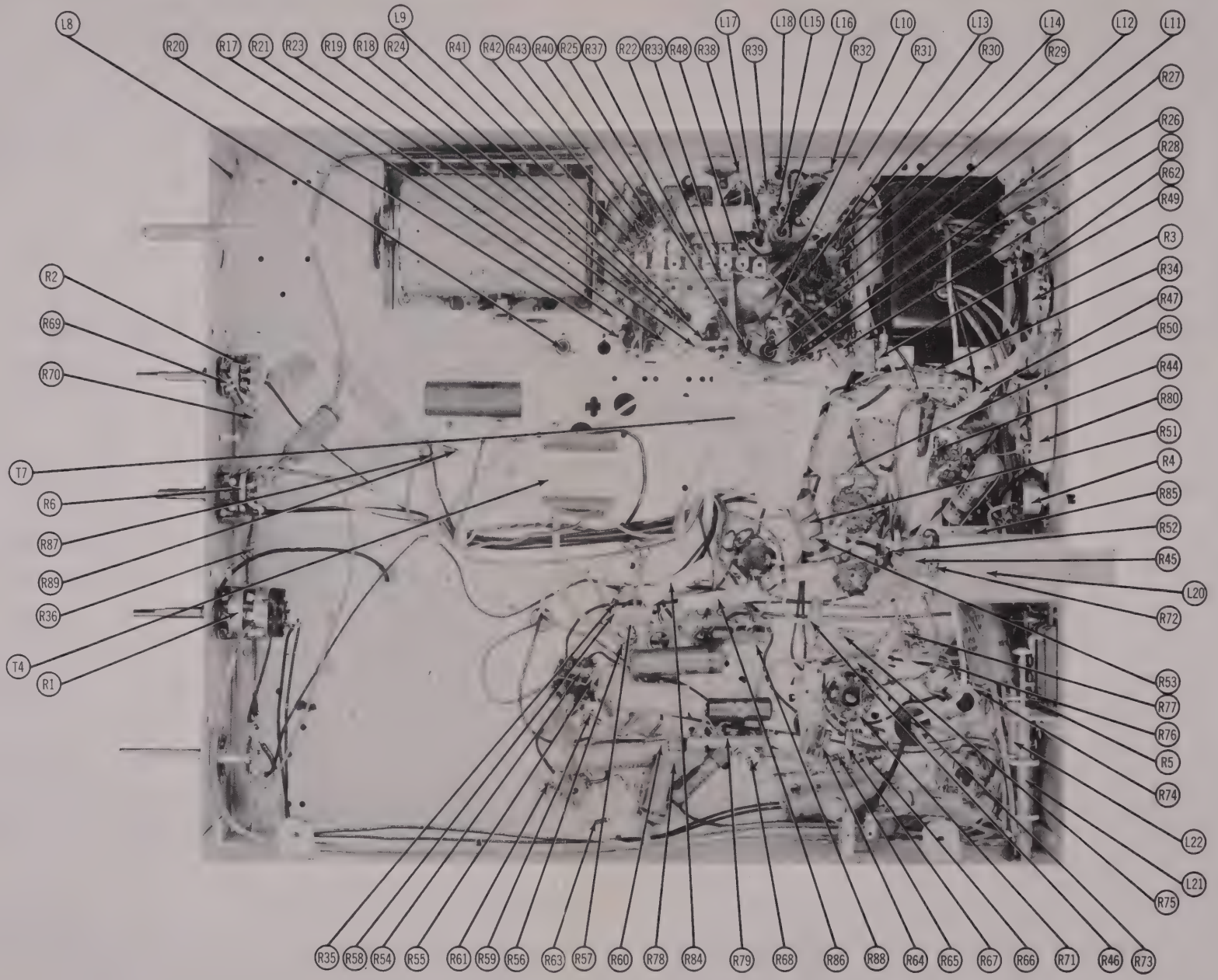
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: Hallicrafters PART No.	MERIT PART No.	NOTES
L2	Ant. Coil	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	RF Mixer Grid, Osc.	0Ω				
L5	Fil. Choke	0Ω				
L6	RF Choke	0Ω				
L7	Conv. Plate Coil	.3Ω				
L8	1st. Video IF	.2Ω		51B1301		Used only with Tuner 1D1055
L9	2nd. Video IF	.2Ω	.2Ω	50A475		
L10	Fil. Choke	0Ω		53A200		
L11A	3rd. Video IF	.2Ω	.2Ω	51B1332		
B	3rd. Video IF			50A476		Alternate
L12	4th. Video IF	.3Ω	.3Ω	50A477		
L13	Peaking Coil	7.8Ω		51A1256		Wound on 6.8K Resistor
L14	Peaking Coil	11.6Ω		51A1260		Wound on 2.2K Resistor
L15	Peaking Coil	11Ω		51A1257		Wound on 15K Resistor
L16A	4.5MC Trap	1.2Ω		51B1333		
B	4.5MC Trap			50B474		Alternate
L17	Peaking Coil	18.5Ω		51A1259		Wound on 2.2K Resistor
L18A	Sound IF	1.2Ω		51B1333		
B	Sound IF			50B474		Alternate
L19	Ratio Det. Trans.	4.1Ω	.8Ω	50C473		Tap at .9Ω
L20	Horiz. Osc.	70Ω	43Ω	51B1242		
L21	Width Coil	24Ω		51B1330		
L22	Horiz. Lin.	5.5Ω		51B1331		Tap at 1.5Ω

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: Hallicrafters PART No. FUSE	Hallicrafters PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG Slo-Blo	1/4A	39A344		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	Hallicrafters PART No.	NOTES
M2A	RF Tuner	1D1055	
B	RF Tuner	1D961	Alternate
C	RF Tuner	1A1077	Alternate
D	RF Tuner	1D1088	Alternate
M3A	Switch	60B428	TV - Phono
B	Switch	60B435	TV - Phono
M4	Switch	60A249	Hi-Lo Line
M5	Ion Trap	21A101	
B2	Trimmer	44A391	7-100MMF (Horiz. Lock)
	Knob	15B234	Off/On Volume, Brightness and Vert. Hold — Models 17804C, 17812, 17813, 17815H, 17819, 17824, 17825, 17838, 17848, 17849, 17850 (Mahogany)
	Knob	15B269	Contrast, Focus & Horiz. Hold
	Knob	15D293	Channel Selector
	Knob	15A299	Fine Tuning
	Knob	15D377	TV - Phono
	Knob	15B243	Off/On Volume, Brightness & Vert. Hold — Models 17840C, 17812, 17813, 17815H, 17819, 17824, 17825, 17838, 17848, 17849, 17850 (Beige)
	Knob	15B276	Contrast, Focus & Horiz. Hold
	Knob	15D294	Channel Selector
	Knob	15A300	Fine Tuning
	Knob	15D378	TV - Phono



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

JACKSON
MODEL JP-50

JACKSON
MODEL JP-50

TRADE NAME	Jackson, Model JP-50
MANUFACTURER	Jackson Industries, Inc. 58 E. Cullerton St. Chicago, Ill.
TYPE SET	AC Operated AM-Phono Combination Superheterodyne Receiver With Loop Antenna
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det. - AVC-AF Amp., 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC Rating .25 Amp@ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05mfd.	High side to stator on rear section of tuning gong. Low side to B.	455 KC (400 ∿mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loops of several turns of wire and radiate siganal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune for max. output	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

JACKSON MODEL JP-50

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: JACKSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	Det. -AVC-AF Amp.	12AT6	12AT6	7BT	
V4	Power output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: JACKSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150		PRS150/40-40		EDL4415		TVA-2445	Filter (Red)
B	40	150							Filter (Red)
C2	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C3	.006	600		P688-006		PTE6D6	GP2-333-602	6TM-D6	Audio Coupling
C4A	.01				♦PC-70				Audio Coupling
B	250								AF Amp. Plate
C									Power output Grid
C5	.02	400		P488-02	DF-203	PTE4S2		4TM-S2	Power Output Plate
C6	.02	400		P488-02	DF-203			4TM-S2	Line Filter
C7	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Line Isolation

♦ Items C4A, C4B, C4C, R7A, R7B are combined in one unit. When replacing seperately C4B and C4C should total 250MMF.

CONTROLS

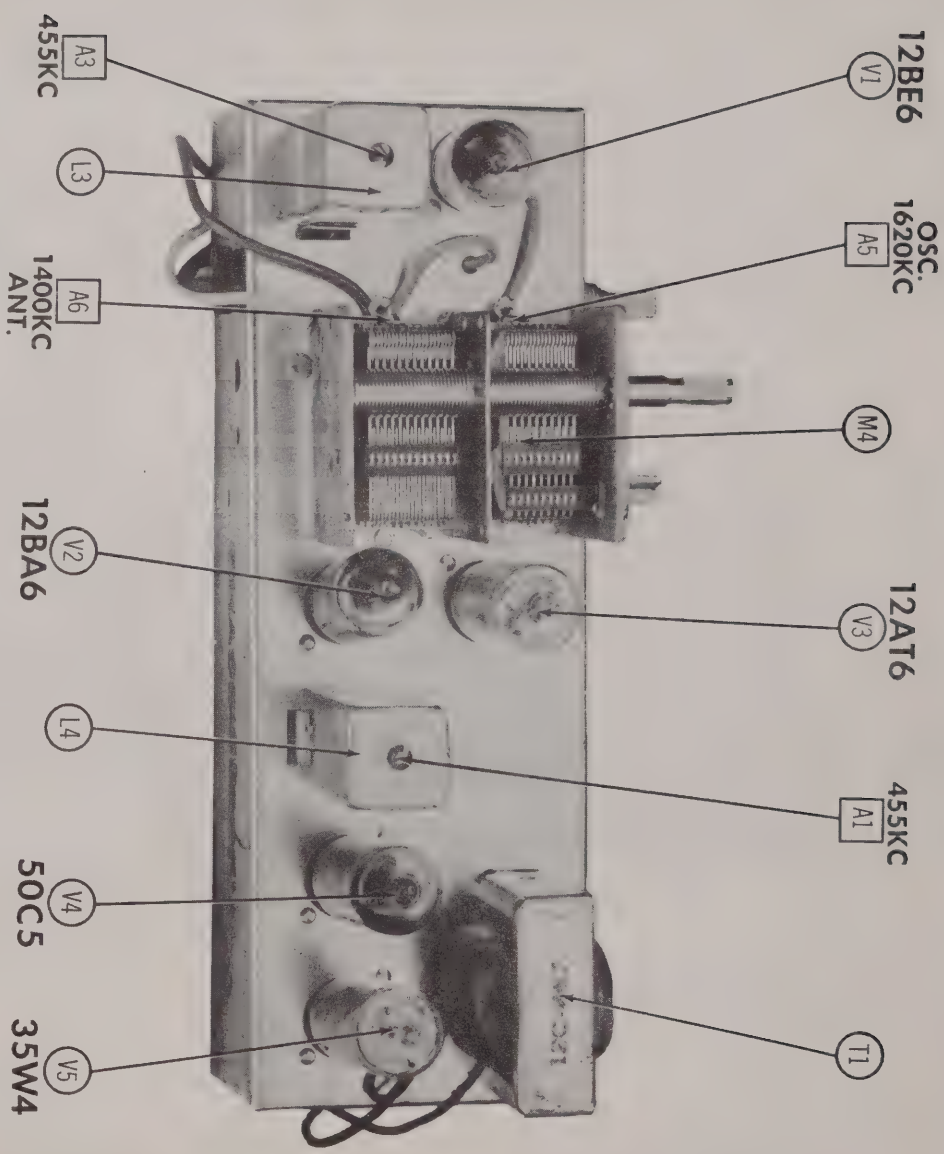
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: JACKSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½		Q13-133	AG-60-Z	BKS-60-S	Volume Control Switch
B	Shaft			Not reg.	KSS-3	Not Req.	Attach to R1A as per instructions
C	Switch			76-1	SWB	Not Req.	Attach to R1A as per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: JACKSON PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½		BTS-22K	Oscillator Grid
R3	150KΩ	½		BTS-150K	I. F. Transformer Shunt
R4	1Meg	½		BTS-1Meg	AVC Network
R5	150KΩ	½		BTS-150K	Series Phono
R6	10Meg	½		BTS-10Meg	AF Amplified Grid
R7A	500KΩ	½	♦	BTS - 470K	AF Amplifier Plate Load
B	500KΩ	½		BTS-470K	Output Grid
R8	150Ω	½		BTS-150	Output Cathode
R9	2200Ω	1		BTA-2200	Filter
R10	15Ω	½		BW-½-15	Rectifier Ballast
R11	200KΩ	½		BTS-220K	Line Isolation

♦ Items C4A, C4B, C4C, R7A, and R7B are combined in one unit

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		JACKSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.3KΩ	3.3Ω	215Ω	.6Ω		A-3876	A-2928	R0-2	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	JACKSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	P. M.	3.3Ω		ST-105 Mod. P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP2	4 7/8 "	9/16				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	JACKSON PART No.	MERIT PART No.	
L1	Loop Ant.	1.8				Tap at .8Ω
L2	Osc. Coil	5Ω				
L3	Input IF	11Ω	19Ω			
L4	Output IF	11Ω	13Ω			

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								REMARKS
	JACKSON PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		LQD-1J	Q and Q-33			96-T	0-1 or S-1 and 0-3 or S-3	† Complete assembly
		7-D †		901D†		2600*		* Tone Arm With 96-0T Installed

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

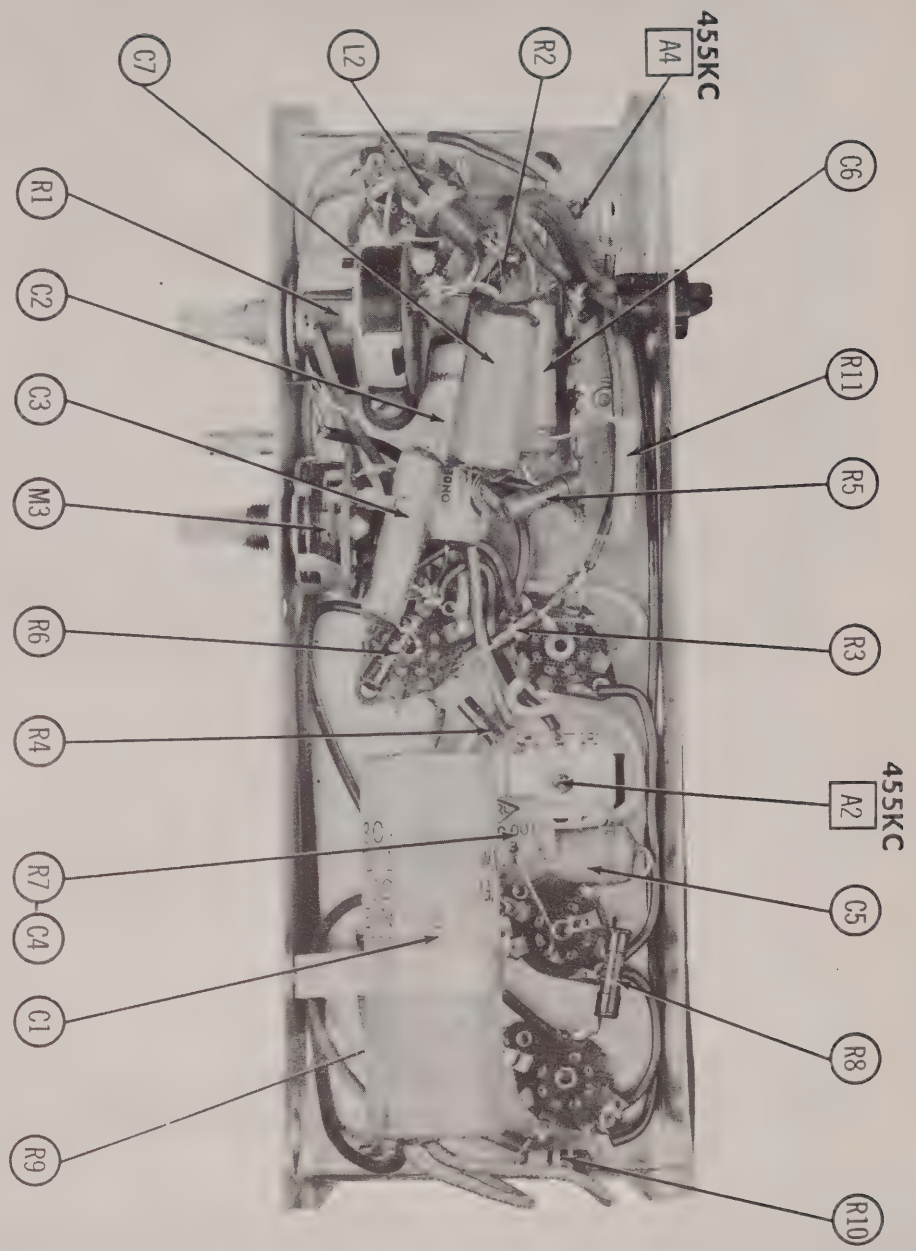
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	JACKSON PART No.	WALCO PART No.	JENSEN PART No.	
M2		W-2A or W-2S and W-2MGA or W-2MGS	A-80 and A-80LP	

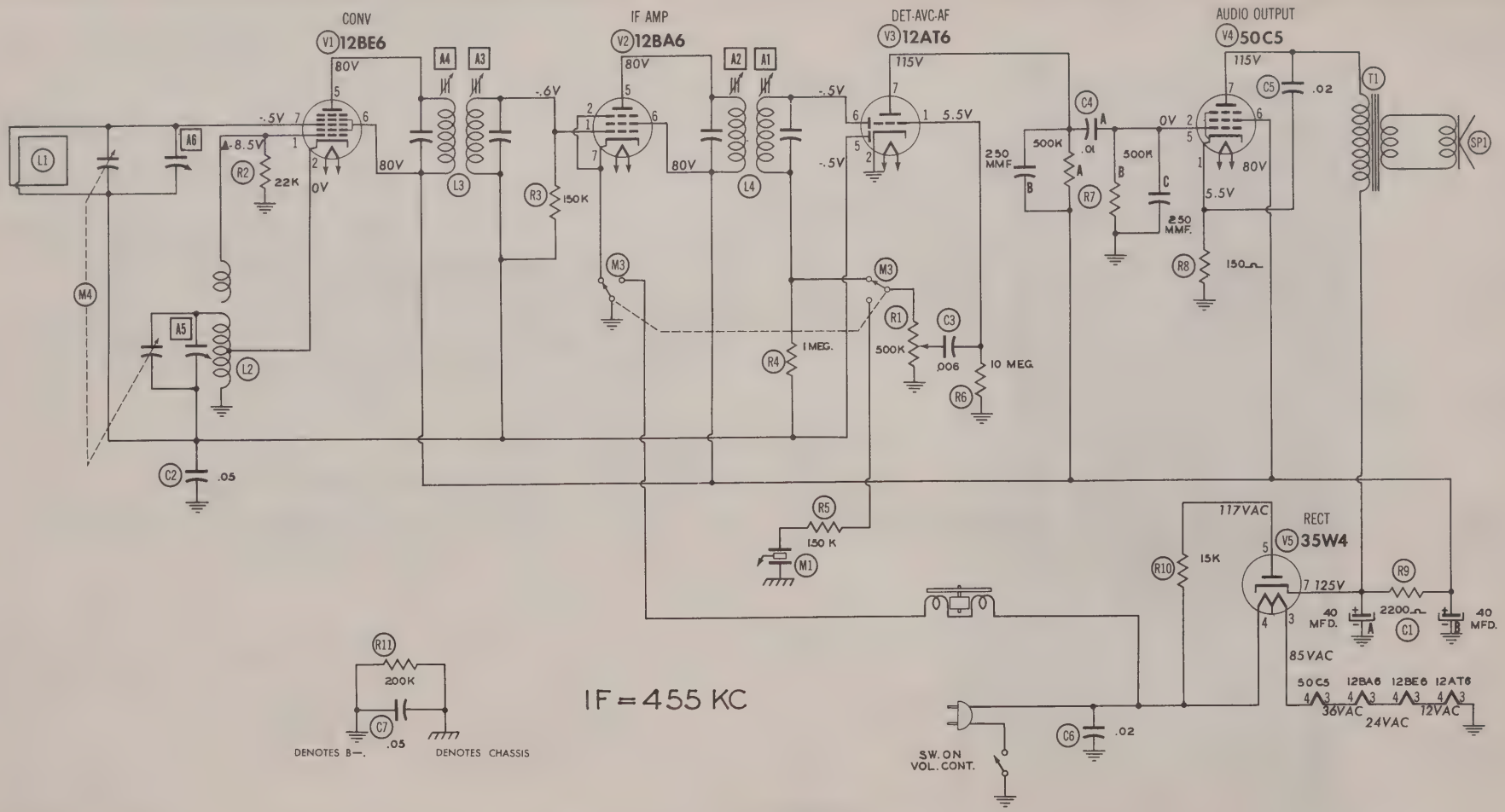
MISCELLANEOUS

ITEM No.	PART NAME	JACKSON PART No.	NOTES
M3 M4	Switch 2 Gang Var. Cap.		Radio-Phono (22-392MMF, 34-202 MMF)

CHASSIS—BOTTOM VIEW



JACKSON MODEL JP-50



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	.8Ω	22KΩ	12Ω	24Ω	†2.2KΩ	†2.2KΩ	1.5Meg
V 2	12BA6	1.6Meg	0Ω-	24Ω	36Ω	†2.2KΩ	†2.2KΩ	0Ω
V 3	12AT6	10Meg	0Ω	0Ω	12Ω	1.5Meg	500KΩ	†500KΩ
V 4	50C5	150Ω	500KΩ	36Ω	86Ω	500KΩ	†2.2KΩ	†215Ω
V 5	35W4	0Ω	INF	86Ω	121	135Ω	103Ω	100KΩ

♦ TAKEN WITH VACUUM TUBE VOLTMETER
ALL MEASUREMENTS TAKEN IN RADIO POSITION
†MEASURE FROM PIN 7 OF V5

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

MAGNAVOX CHASSIS CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297

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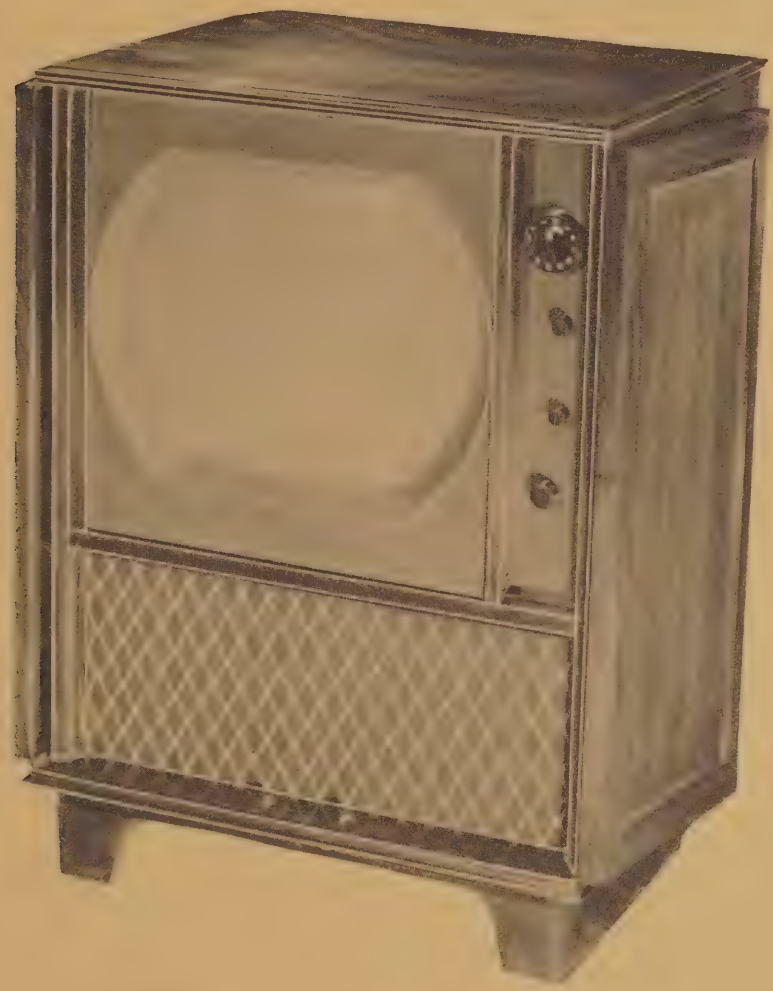

CHASSIS CT297

MAGNAVOX CHASSIS CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297

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*TRADE MARK

MAGNAVOX CHASSIS CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297

MAGNAVOX CHASSIS MODEL CT 297

TRADE NAME	Magnavox Chassis Models CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297
MANUFACTURER	Magnavox Co., 2131 Bueter Rd., Fort Wayne, Ind.
TYPE SET	Television Receiver
TUBES	Twenty Seven
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 2.53 Amp. @ 117 Volts AC
TUNING RANGE—	Channels 2 thru 13

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13, 14
Photographs
Audio Chassis 7, 8
Cabinet - Rear View 11
Capacitor and Alignment Identification 4, 9
Photographs (cont.)
Chassis - Top View 3
RF Tuner 10
Resistor and Inductor Identification 15, 16
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

MAGNAVOX CHASSIS CT262, CT263, CT264, CT265, CT283, CT286, CT289, CT291, CT293, CT297

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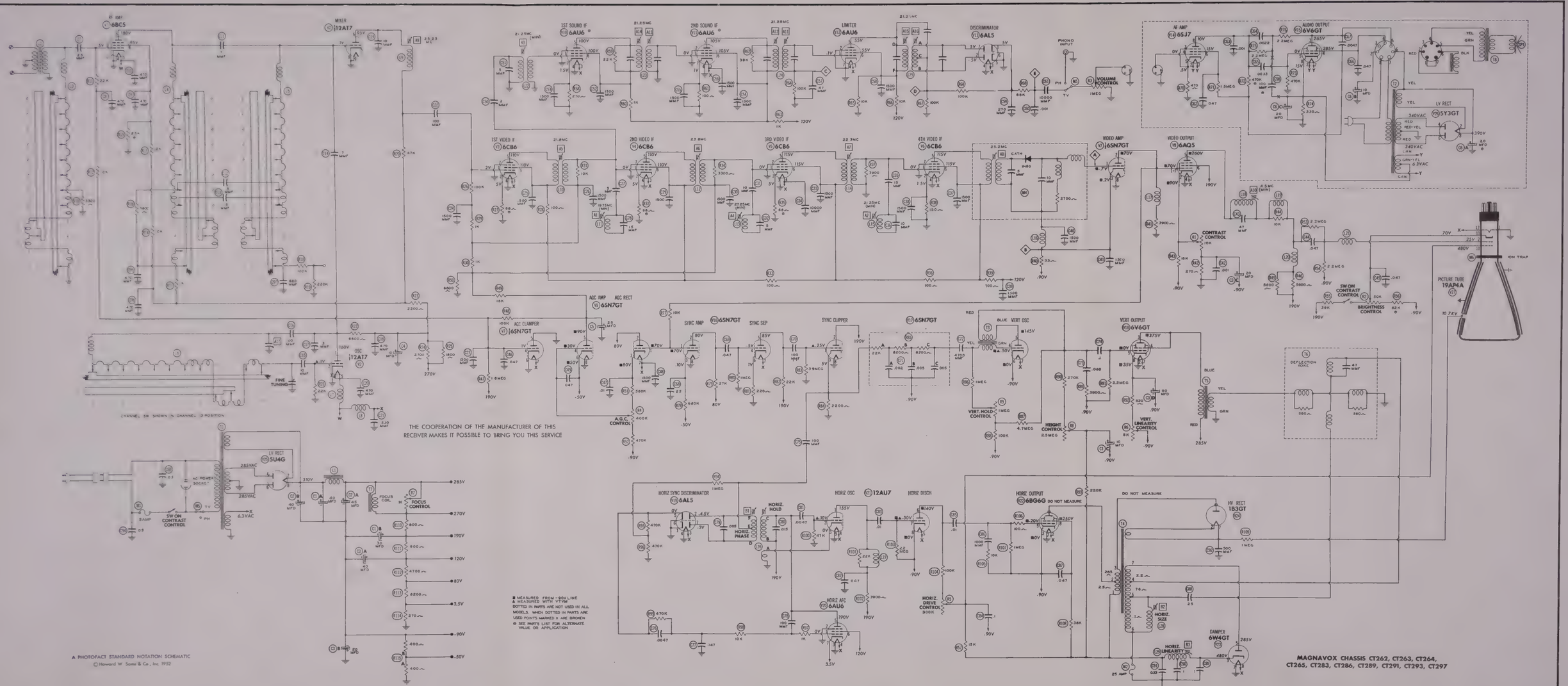

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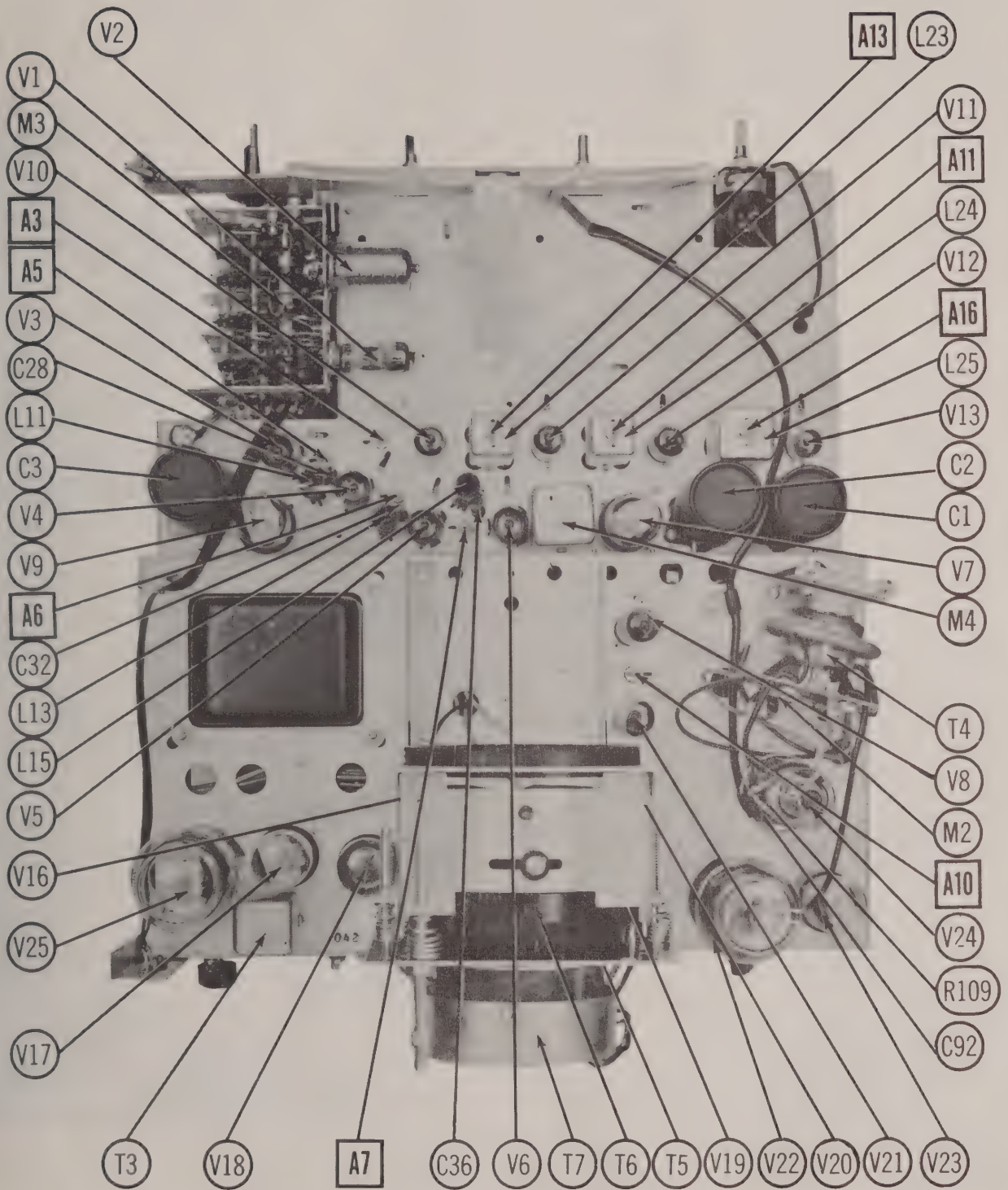
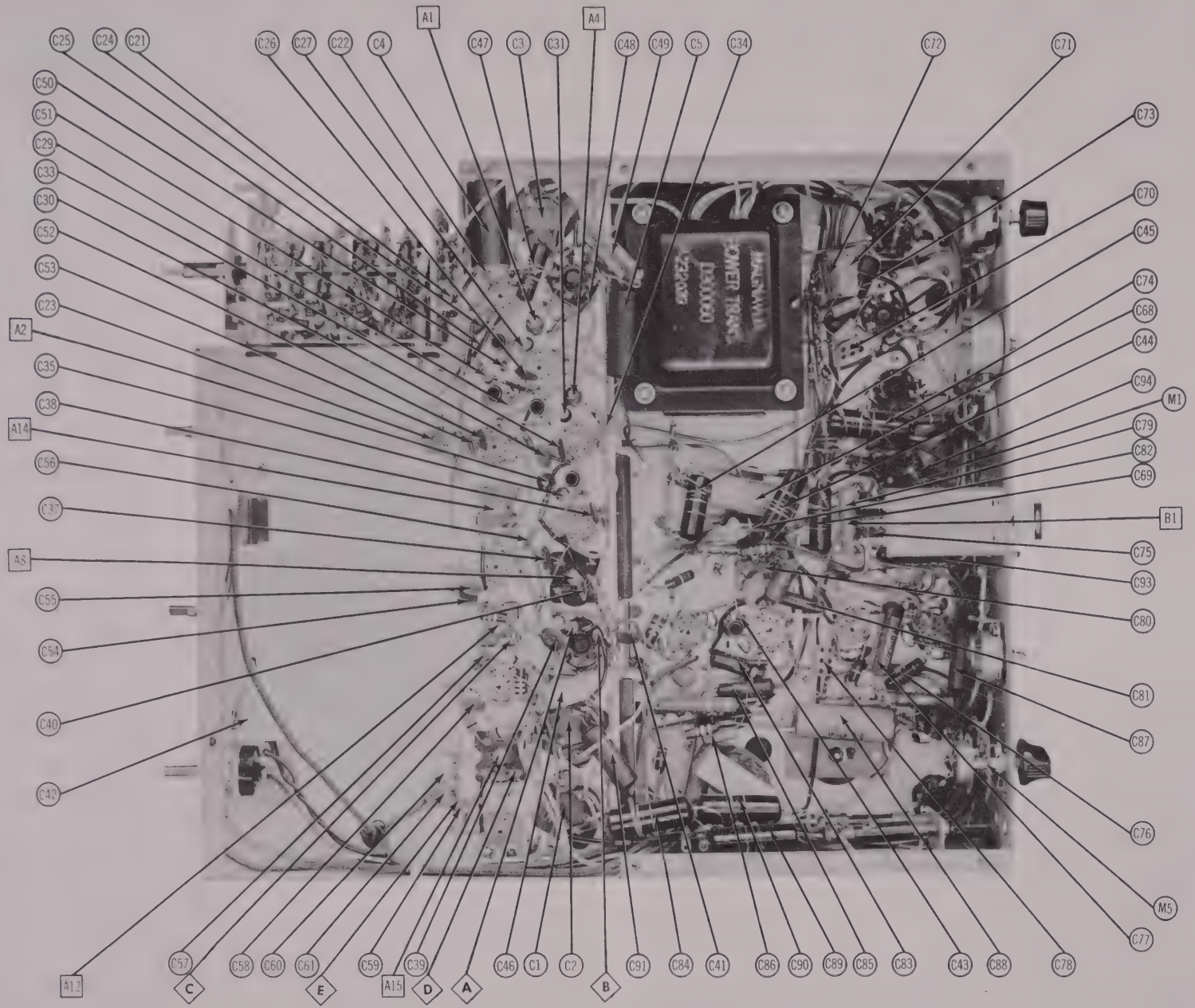
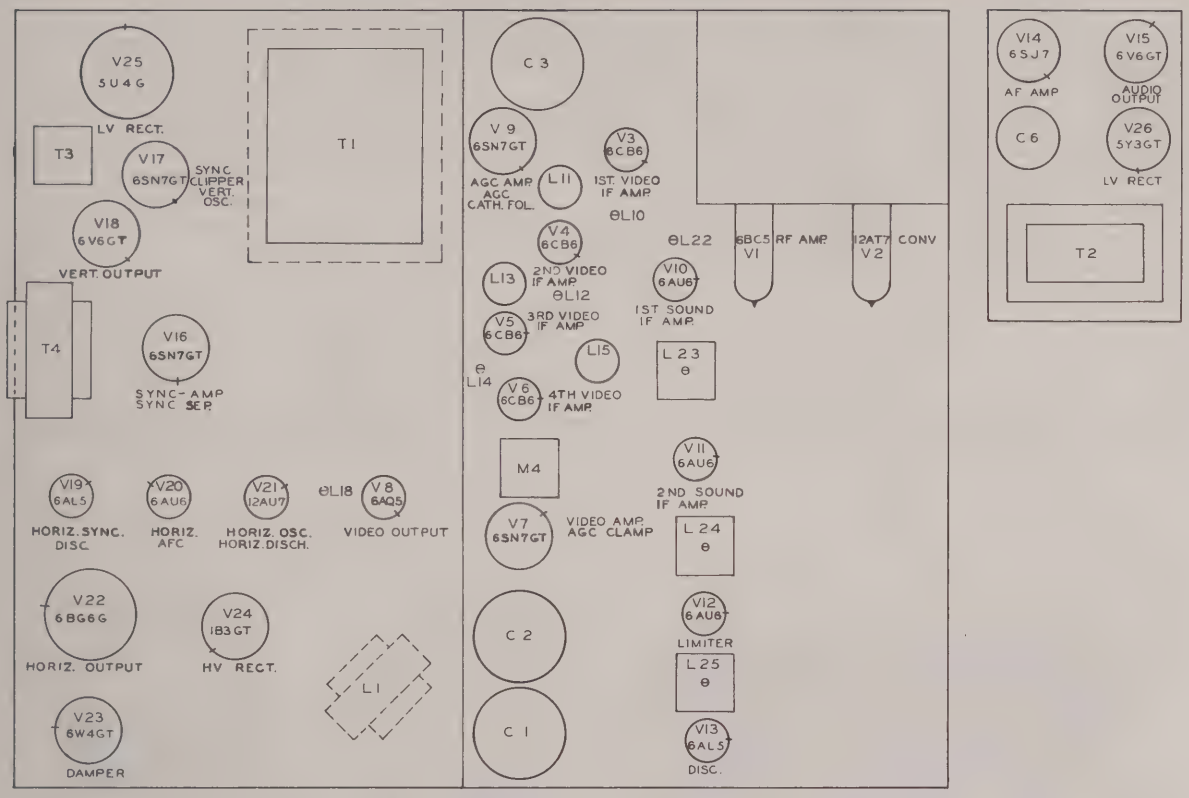


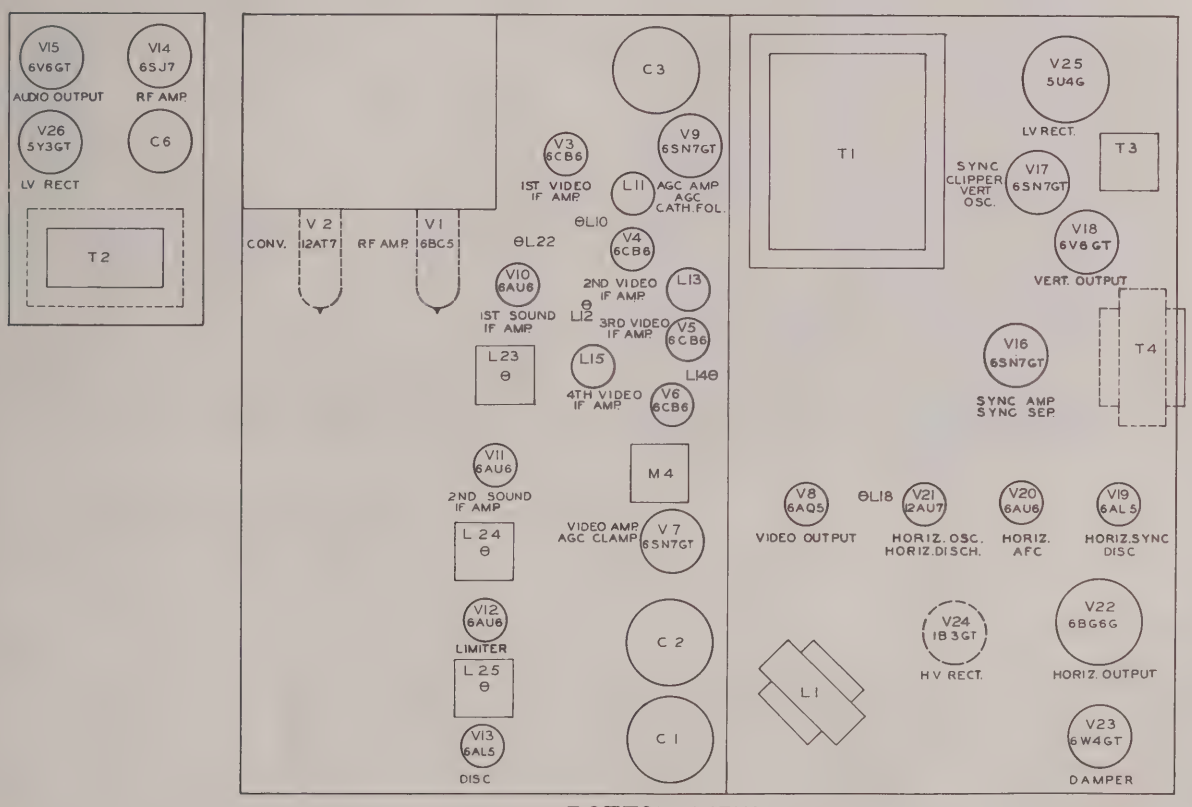
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

VIDEO IF ALIGNMENT

During video IF alignment, switch to a channel which causes no interference. To check for interference turn the fine tuning control, if the meter reading changes, switch to another channel. Connect the negative lead of a 2 volt supply to pin 5 of V9. Connect the positive lead to chassis. During video IF alignment the common lead of the VTVM is connected to approximately 100volts with respect to chassis. Avoid touching or grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1,	Direct	High side to an ungrounded tube shield floating over converter tube, (V2). Low side to chassis.	19.75 MC (unmod)	See note above.	DC probe to point (A). Common to point (B).	A1	Adjust for MINIMUM deflection
2.	"	"	21.25MC	"	"	A2, A3	"
3.	"	"	27.25MC	"	"	A4	"
4.	"	"	21.8MC	"	"	A5	Adjust for maximum deflection.
5.	"	"	23.8MC	"	"	A6	"
6	"	"	22.3MC	"	"	A7	"
7.	"	"	25.2MC	"	"	A8	"
8.	"	"	25.5MC	"	"	A9	Adjust for maximum deflection. Repeat Step 2.

OVERALL VIDEO IF RESPONSE CHECK

Switch to a channel which causes no interference with the response curve. To check for interference turn the fine tuning control, if the response curve changes switch to another channel.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over converter tube, (V2). Low side to chassis	24MC (10MC Swp)	21.25MC 22.3MC 25.75MC 27.25MC	See note above.	Vert. Amp. to point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A5 thru A9 for proper response.

MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.01MFD	High side to pin 7, (grid) of 6AQ5 (V8). Low side to chassis.	Not used.	4.5MC (400∿Mod)	Any	Vert. Amp thru detector, Fig. 2, to pin 2 of picture tube. Low side to chassis.	A10	Adjust for minimum 400∿ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.01MFD.	High side to pin 1 (grid) of 6AU6 (V10). Low side to chassis.	21.25MC (Unmod)	See note above video alignment.	DC probe to point (D). Common to chassis.	A11, A12 A13, A14	Adjust for maximum deflection .
12.	"	"	"	"	DC probe thru 1Meg to point (E). Common to chassis	A15	"
13.	"	"	"	"	DC probe to point (F). Common to chassis.	A16	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	.01MFD	High side to pin 1, (grid) of 6AU6 (V10). Low side to chassis.	21.25MC (450KCSwp)	21.25MC	See note above video response check.	Vert. Amp. thru 47KΩ to point (D). Low side to chassis.	A11, A12 A13, A14	Adjust for maximum amplitude and symmetry as per Fig. 3
12.	"	"	"	"	"	Vert. Amp. to point (E). Low side to chassis.	A16, A15	Adjust A16 so 21.25 MC occurs at center of crossover lines as per Fig. 4. Adjust A15 for maximum amplitude and straightness of crossover lines. Continue with step 14.

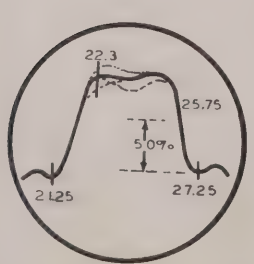


FIG.1

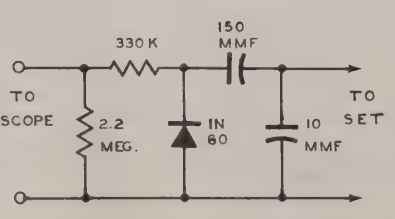


FIG.2

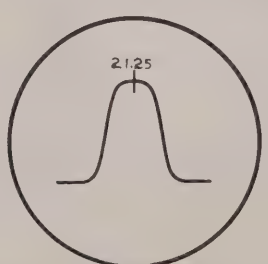


FIG. 3

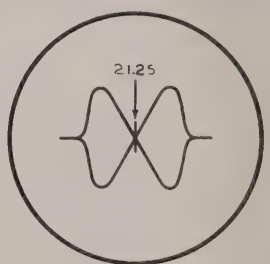


FIG. 4

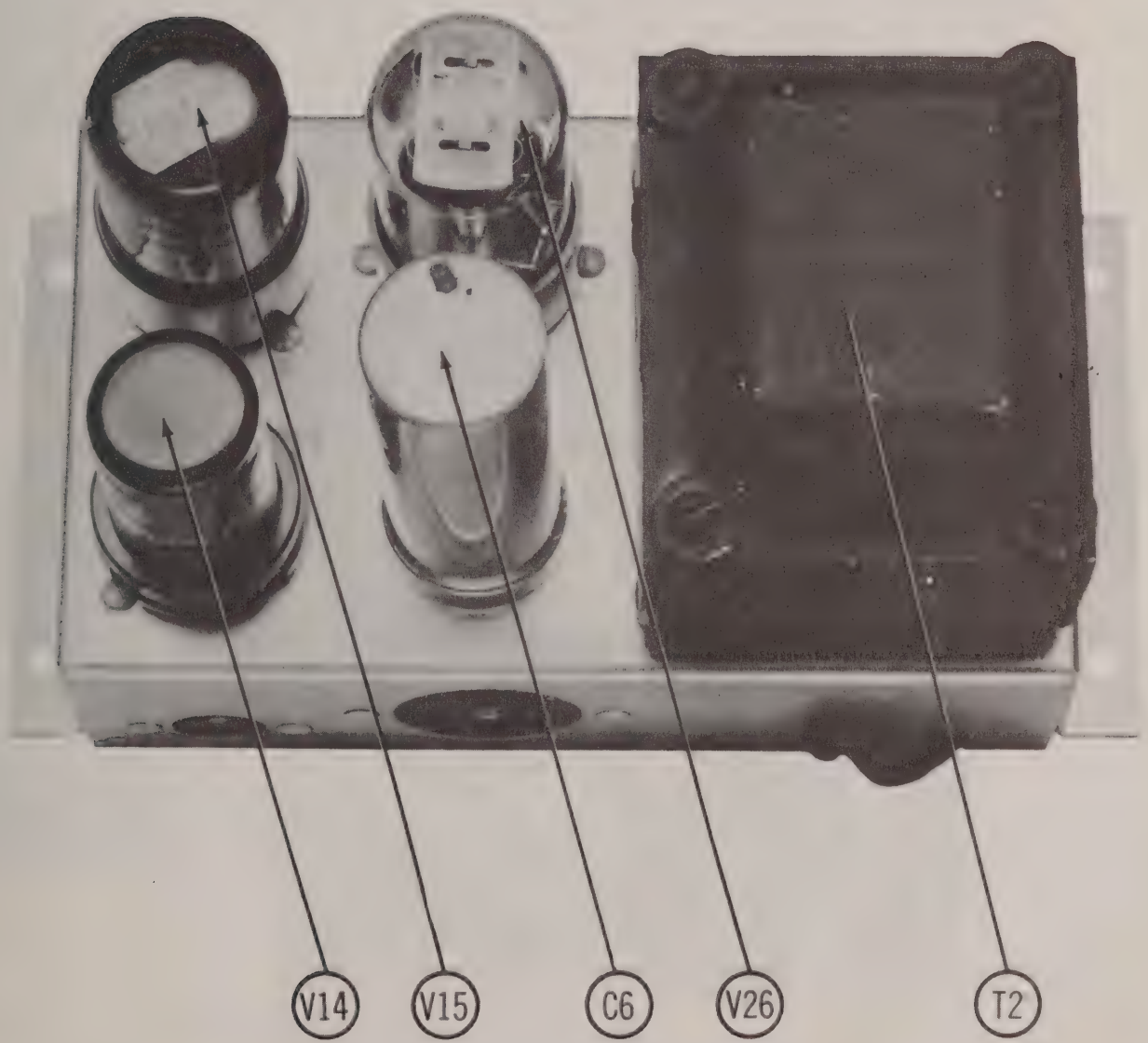
ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50Ω.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
14.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC (unmod)	13	DC probe to point Ⓔ. Common to chassis.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
15.	"	"	209.75MC 203.75MC 197.75MC 191.75MC 185.75MC 179.75MC 87.75MC 81.75MC 71.75MC 65.75MC 59.75MC	12 11 10 9 8 7 6 5 4 3 2	"		Check all channels to see that zero voltage can be obtained more than 30 degrees from either end of the fine tuning control range. If not, make compromise adjustment of A17.

THE RF PORTION OF THIS TUNER HAS BEEN PROPERLY ADJUSTED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.



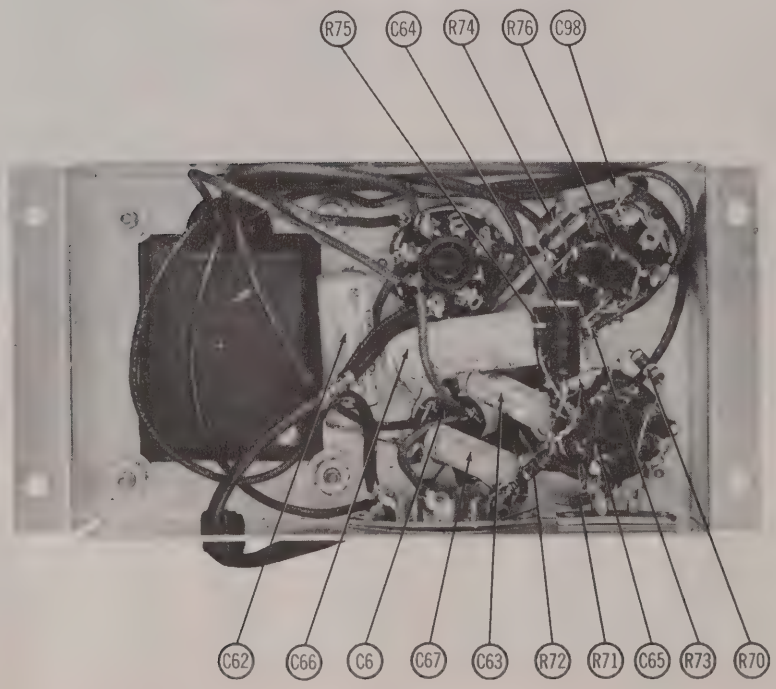
AUDIO CHASSIS – TOP VIEW

RESISTANCE MEASUREMENTS

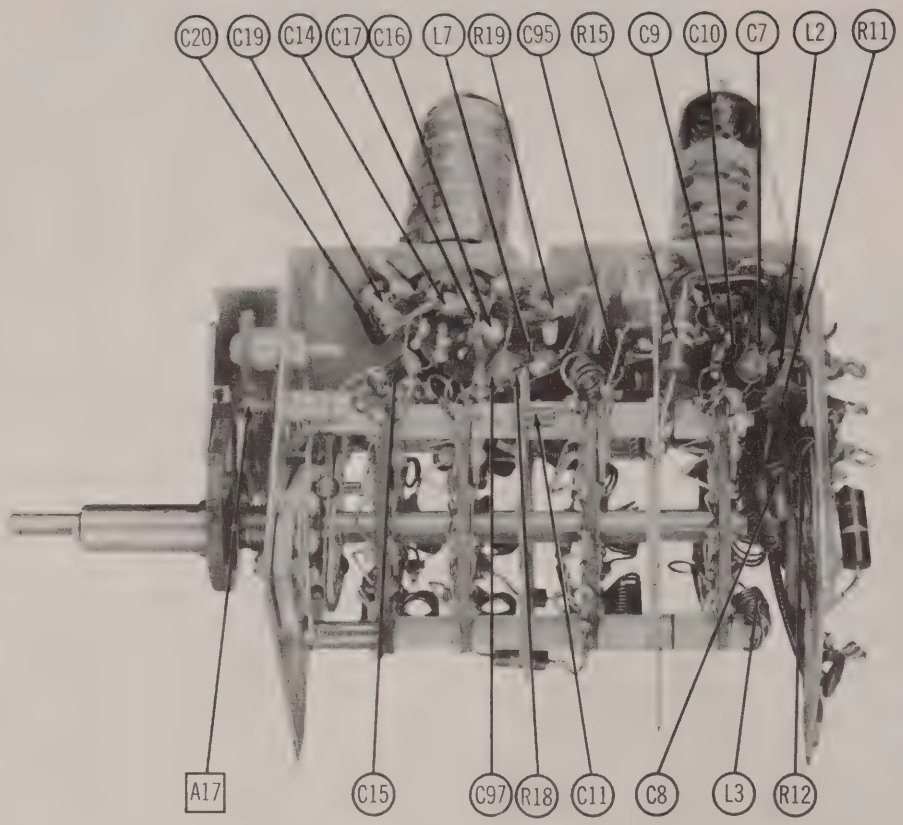
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	150KΩ	0Ω	.2Ω	0Ω	†4.5KΩ	†14KΩ	0Ω		
V 2	12AT7	†8KΩ	22KΩ	0Ω	.4Ω	.4Ω	†50KΩ	320KΩ	0Ω	0Ω
V 3	6CB6	110KΩ	68Ω	.1Ω	0Ω	†2.3KΩ	†2.3KΩ	0Ω		
V 4	6CB6	7.8KΩ	68Ω	.1Ω	0Ω	†2.2KΩ	†2.2KΩ	0Ω		
V 5	6CB6	6.8KΩ	68Ω	0Ω	.1Ω	†2.1KΩ	†2.1KΩ	0Ω		
V 6	6CB6	.4Ω	150Ω	.1Ω	0Ω	†2KΩ	†2KΩ	0Ω		
V 7	6SN7GT	▲2.7KΩ	3.9KΩ	▲33Ω	125KΩ	0Ω	0Ω	.1Ω	0Ω	
V 8	6AQ5	3.9KΩ	750Ω	.1Ω	0Ω	†3.8KΩ	†1KΩ	3.9KΩ		
V 9	6SN7GT	14KΩ	†6.6KΩ	▲1.4Meg	▲680KΩ	25KΩ	400Ω	.1Ω	0Ω	
V 10	6AU6	.4Ω	0Ω	.1Ω	0Ω	†3.9KΩ	†3.9KΩ	270Ω		
V 11	6AU6	.1Ω	0Ω	.1Ω	0Ω	†2.9KΩ	†2.9KΩ	100Ω		
V 12	6AU6	100KΩ	0Ω	.1Ω	0Ω	†8KΩ	†8KΩ	0Ω		
V 13	6AL5	200KΩ	100KΩ	.1Ω	0Ω	0Ω	0Ω	100KΩ		
V 14	6SJ7	0Ω	♦0Ω	470Ω	0Ω	470Ω	■1.5Meg	♦.1Ω	■470KΩ	
V 15	6V6GT	Inf.	♦.1Ω	■2.6KΩ	■2.2KΩ	470KΩ	■1.3Meg	♦0Ω	330Ω	
V 16	6SN7GT	14KΩ	†33KΩ	680KΩ	1Meg	†22KΩ	220Ω	.1Ω	0Ω	
V 17	6SN7GT	3.9Meg	†1KΩ	2.2KΩ	▲1.4Meg	#1.1Meg	▲0Ω	.1Ω	0Ω	
V 18	6V6GT	0Ω	0Ω	†875Ω	†875Ω	▲2.2Meg	†56Ω	.1Ω	▲2KΩ	
V 19	6AL5	0Ω	1.4Meg	.1Ω	0Ω	940KΩ	0Ω	1.4Meg		
V 20	6AU6	1.4Meg	0Ω	0Ω	.1Ω	†1KΩ	†1.9KΩ	270Ω		
V 21	12AU7	†4.9KΩ	47KΩ	12Ω	.1Ω	.1Ω	#270KΩ	▲2.2Meg	▲0Ω	0Ω
V 22	6BG6G	Inf.	0Ω	0Ω	†56Ω	▲1Meg	▲1Meg	.1Ω	#38KΩ	TOP CAP #34Ω
V 23	6W4GT	Inf.	Inf.	300KΩ	Inf.	†71Ω	Inf.	0Ω	.1Ω	
V 24	1B3GT	PINS 1 THROUGH 8 HAVE INF RESISTANCE								TOP CAP #310Ω
V 25	5U4G	800Ω	7.8KΩ	Inf.	800Ω	4.7KΩ	800Ω	Inf.	7.8KΩ	
V 26	5Y3GT	1.6Meg	390KΩ	Inf.	400Ω	Inf.	400Ω	Inf	390KΩ	
V 27	19AP4A	0Ω	▲1.3Meg	PIN 10 #15KΩ	PIN 11 †8KΩ	PIN 12 .1Ω				

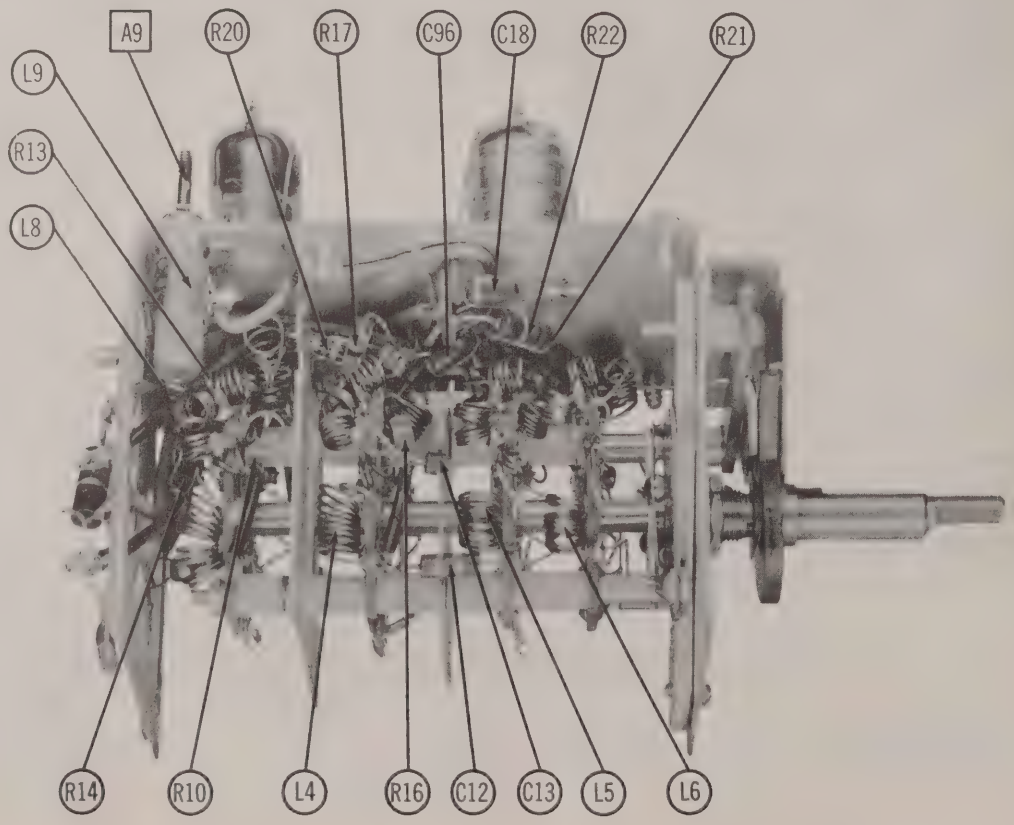
ALL CONTROLS SET FOR NORMAL OPERATION
† MEASURED FROM PIN 8 OF V25
■ MEASURED FROM PIN 8 OF V26
♦ MEASURED FROM PIN 7 OF V15
MEASURED FROM PIN 3 OF V23
▲ MEASURED FROM - 90 VDC LINE



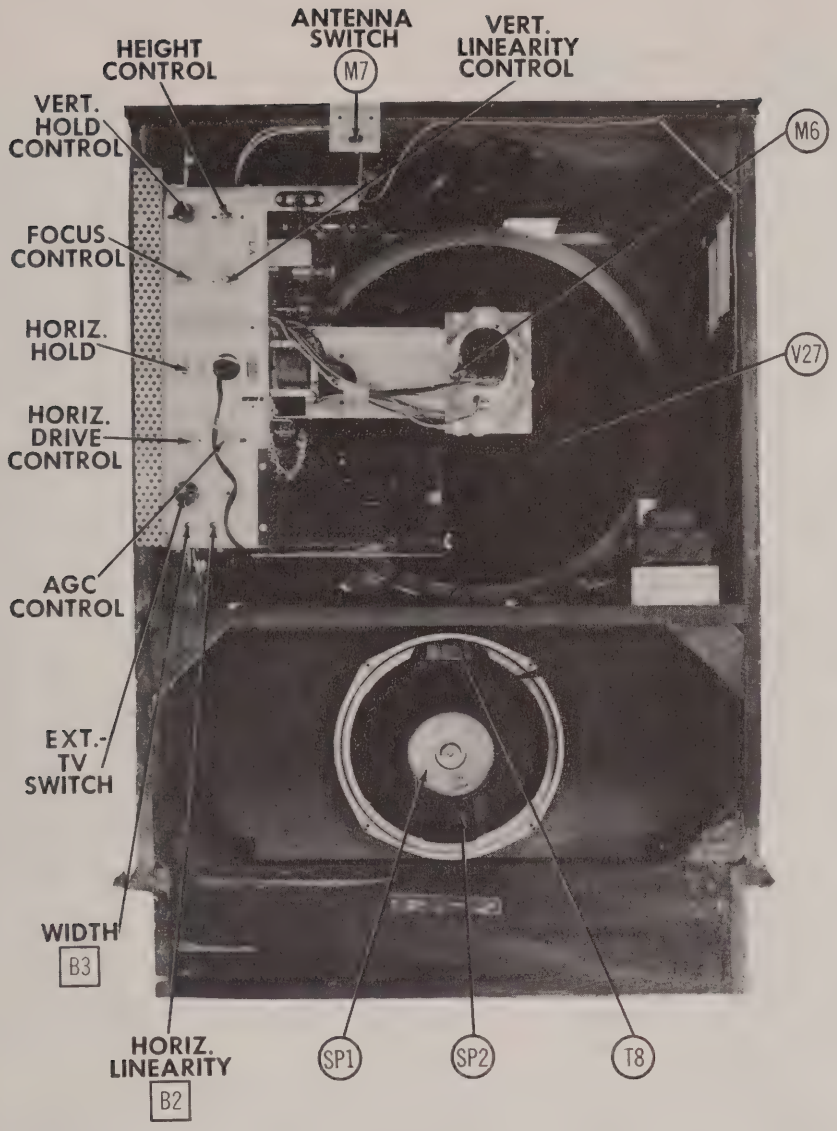
AUDIO CHASSIS – BOTTOM VIEW



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Remove the horizontal sync. discriminator tube, (V19), from its socket.
Adjust the horizontal hold adjustment until the picture moves back and forth slowly with the blanking bar vertical.
Replace the AFC tube in its socket. The picture should now pull into sync. immediately after switching to another channel and back again.
In the event that the above condition cannot be obtained it may be necessary to adjust the horizontal phase adjustment, (B1).
Increase the brightness and decrease the contrast until the normally blanked edges of the raster are visable. The blanking signals should appear as a gray bar on the right side of the raster, followed by a darker bar further to the right.
Adjust the phasing slug, (B1), until the picture moves to the right approximately one half of the first gray bar's width. There should be a narrow gray bar followed by a darker bar when B1 is properly adjusted.
Adjust the horizontal linearity slug, (B2), until the end of the screw is $\frac{1}{2}$ to 5/8 in. above the mounting nut.
Adjust the horizontal drive control for maximum width and high voltage. Maximum high voltage can be detected by minimum height. If a bright vertical bar appears in the picture reduce the drive just enough to remove the line.
Adjust the horizontal linearity slug, (B2) until the picture is symmetrical from left to right. Slight readjustment of the drive control may be necessary to obtain optimum results.
Adjust the width slug, (B3), until the picture is slightly wider than necessary to fill the mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built in antenna.
4. Disconnect speaker.
5. Disconnect audio chassis power plug.
6. Disconnect audio input plug from audio chassis.
7. Remove four phillips head screws from audio chassis. Remove chassis.
8. Remove four phillips head bolts from main chassis. Remove chassis.
9. Remove four 11/32" hex nuts from speaker. Remove speaker.

NOTE. FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE:

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAGNAVOX PART No	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	7BD	(Some Models may use 6BC5 & 6AB4 in place of V5)
V2	Converter	12AT7	12AT7	9A	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Amplifier AGC Clamp.	6SN7GT	6SN7GT	8BD	
V8	Vert. Output	6AQ5	6AQ5	7BZ	
V9	AGC Amp. AGC Rectifier	6SN7GT	6SN7GT	8BD	
V10A	1st. Sound IF Amp.	6AU6	6AU6	7BK	
B	1st. Sound IF Amp.	6BA6	6BA6	7BK	
V11A	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
B	2nd. Sound IF Amp.	6BA6	6BA6	7BK	
V12	Limiter	6AU6	6AU6	7BK	
V13	Discriminator	6AL5	6AL5	6BT	
V14	AF Amplifier	6SJ7	6SJ7	8N	
V15	Audio Output	6V6GT	6V6GT	7AC	
V16	Sync. Amplifier Sync. Seperator Sync. Clipper	6SN7GT	6SN7GT	8BD	
V17	Vert. Oscillator Vert. Output	6SN7GT	6SN7GT	8BD	
V18	Vert. Output	6V6GT	6V6GT	7AC	
V19	Horiz. Sync. Discr	6AL5	6AL5	6BT	
V20	Horiz. AFC	6AU6	6AU6	7BK	
V21	Horiz. Oscillator Horiz. Discharge	12AU7	12AU7	9A	
V22	Horiz. Output	6BG6G	6BG6G	5BT	
V23	Damper	5W4GT	5W4GT	4CG	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	LV Rectifier	5U4G	5U4G	5T	
V26	LV Rectifier	5Y3GT	5Y3GT	5T	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: MAGNAVOX PART No.	SYLVANIA PART No.	THOMAS PART No.	RMA BASE TYPE	NOTES
V27	19AP4A	19AP4A		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: MAGNAVOX PART No.	AEROVOX PART No.	CENTRALAB PART No	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	270021-24	AFH 3-54		UPT44145		TVL-4840	▲ Filter ■ Decoupling
B	30	475							▲ Decoupling
C	10	475							
C2A	45	475	270021-33	AFH 2-72		UPT4450		TVL-2830	▲ Filter ■ Decoupling
B	40	475							▲ Filter
C3A	40	350	270021-40	AFH 4-56		UPT431		TVL-3640 TVA-1310	■ Bias Filter ▲ Video Output Cathode Vert. Output Cathode
B	50	150							
C	20	150							
D	80	50							
C4	10	350	270027-9	PRS350-12		BR1235A		TVA-1604	Decoupling
C5	25	50	270027-7	PRS-50-25		BR255A		TVA-1306	AGC Amp. Plate
C6A	20	475	270023-12	AFH 3-158				TVL-3835 TVA-1205	■ Filter † ▲ Filter
B	10	475							
C	20	25							Audio Output Cathode
C7	25			SI25	D6-250		GPIK-250	5GA-Q25	RF Coupling
C8	470			SI470	D6-471		GP2K-471	5GA-T47	AGC Filter
C9	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Screen
C10	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Fil.
C11	.7				TCZ-.68		NP0K-R68		RF Coupling
C12	.5				TCZ-.5		NP0K-R50		RF Coupling
C13	1.5			SI.5NP0	TCZ-1.5		NP0K-1R5		RF Coupling
R14	.7				TCZ-.68		NP0K-R68		Osc. Coupling
R15	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Osc. Grid Cap.
R16	100			SI100	D6-101		GPIK-101	5GA-T1	Osc. Feedback
C17	5			SI5NP0			NP0K-030		Fixed Trimmer
C18	470			SI470	D6-471		GP2K-471	5GA-T47	RF Bypass
C19	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C20	470			SI470	D6-471		GP2K-471	5GA-T47	Conv. Fil.
C21	1500			SI1500	D6-152		GP2L-152	5HK-D15	Fil. Bypass
C22	100			SI100	D6-101	5W5T1	GPIK-101	5GA-T1	IF Coupling
C23	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C24	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C25	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	1st. Video IF Dec.
C26	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C27	5		250206-5	SI5			5W5V5	GPIK-050	IF Coupling
C28	15		250206-5	SI15	D6-150		GPIK-150	5GA-Q15	Fixed Trimmer
C29	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Video IF Dec.
C30	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C31	10		250206-3	SI10	D6-100	5W5Q1	GPIK-100	5GA-Q1	IF Coupling
C32	5		250206-1	SI5NP0	TCZ-4.7		NP0K-050		Fixed Trimmer
C33	.500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	3rd. Video IF Dec.
C34	10000		250175-2	BPD-01	DD-103	1D3S1	821-01	5HK-S1	3rd. Video IF Fil.
C35	15		250206-5	SI15	D6-150		GPIK-150	5GA-Q15	IF Coupling
C36	10		250206-3	SI10	D6-100	5W5Q1	GPIK-100	5GA-Q1	Fixed Trimmer
C37	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	4th. Video IF Dec.
C38	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	4th. Video IF Cathode
C39	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	RF Bypass
C40	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Bias Filter
C41	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Video Amp. Cathode
C42	.001	600	250201-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Bias Filter
C43	47	500	250207-11	1469-00005		5R5Q5		MS-45	Fixed Trimmer
C44	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Video Coupling
C45	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Picture Tube Cathode
C46	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	RF Bypass
C47	.01	600	250201-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AGC Rect. Cathode
C48	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Rect. Filament
C49	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	AGC Amp. Grid
C50	2.2		250164-13	SI2.2NP0	TCZ-2.2		NP0K-2R2		Sound IF Coupling
C51	5		250206-1	SI5		5W5V5	GPIK-050		Fixed Trimmer
C52	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	1st. Sound IF Dec.
C53	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	1st. Sound IF Cathode
C54	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Sound IF Dec.
C55	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Sound IF Cathode
C56	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Sound IF Fil.
C57	47	500	250207-11	1469-00005		5R5Q5		MS-45	Limiter Grid Filter
C58	1500		250175-3	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Limiter Dec.
C59	270		250207-20	SI270	D6-271	5W5T3	GP2K-271	5GA-T27	RF Bypass
C60	.001	600	250201-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	De-Emphasis
C61	10000		250175-2	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling
C62	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	AF Amp. Screen
C63	.001	600	250201-1	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	AF Amp. Plate
C64	.0022	600		P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Vert. Rect. Comp.
C65	.0033	600		P688-0033	D6-333	PTE6D3	GP2-333-333	6TM-D33	Audio Coupling
C66	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Audio Output Screen
C67	.0047	600	250201-5	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Output Plate
C68	.25	400	250151-21	P488-25		GY4P25		4TM-P25	Sync. Amp. Cathode
C69	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Sync. Coupling
C70	100	500	250159-98	1468-0001	DG-101	5W5T1	GPIK-101	1FM-31	Sync. Coupling
C71A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net
B	.005		●250186-1	P688-005	●PC-100	PTE6D5	GP2-333-502	●101C1	Vert. Integrator Net
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net
C72	4700	500	250161-24	1464-005		1DR5D5		MS-25	Vert. Osc. Grid Cap.
C73	.068	600	250201-12	P688-068					Vert. Discharge
C74	.1	600	250201-13	P688-1	D#-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C75	100	500	250159-98	1468-0001	D6-101	5W5T1	GPIK-101	1FM-31	Horiz. Sync. Coupling
C76	.0047	600	250201-5	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	AFC Filter
C77	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	AFC Filter
C78	100	500	250159-98	1468-0001	D6-101	5W5T1	GPIK-101	1FM-31	AFC Filter
C79	.005	600	250185-9	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Fixed Trimmer
C80	.015	600	250185-10	P688-015		PTE6S15		6TM-S15	Fixed Trimmer
C81	.0047	600	250201-5	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Horiz. Osc. Grid Cap.
C82	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Horiz. Osc. Plate Dec.
C83	.01	600	250201-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Horiz. Sweep Coupling
C84	.1	600	250201-13	P688-01	D#-104	PTE6P1		6TM-P1	Decoupling
C85	.01	600	250201-7	P688-01	D6-103	PTE6S1		6TM-S1	Horiz. Sweep Coupling
C86	1000	500	250160-64	1464-001		1R5D1		MS-21	Horiz. Discharge
C87	.047	600	250201-11	P688-047	DF-503	PTE6S5		6TM-S47	Horiz. Output Screen
C88	.25	400	250151-21	P488-25		GT4P25		4TM-P25	Horiz. Sweep Coupling
C89	.1	600	250201-13	P688-1	D#-104	PTE6P1		6TM-P1	Damper Filter
C90	.1	600	250201-13	P688-1	D#-104	PTE6P1		6TM-P1	Damper Filter
C91	.033	600	250201-10	P688-033		PTE6P1			Damper Filter
C92	500	15000		HV20C	TV3-502				HV Filter
C93	.05	400	250129-15	P488-05	D#-503	PTE4S5		4TM-S5	Line Filter
C94	.05	400	250129-15	P488-05	D#-503	PTE4S5		4TM-S5	Line Filter
C95	470			SI470	D6-471		GP2K-471	5GA-T47	RF Bypass
C96	470			SI470	D6-471		GP2K-471	5GA-T47	RF Bypass
C97	680			SI680	D6-681		GP2K-681	5GA-T68	Mixed Grid Filter
C98	100	500		1468-0001	D6-101	5W5T1	GP2K-101	1FM-31	Tone Comp. *

† Some models use 25M#D in this application.
● Items C71A, C71B, C71C, R85A, R85B, R85C are combined in one unit.
* Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	10KΩ	1/2	220076-43	Q14-116	AG-30-V	B-17-S	Contrast Control
B	Shaft		Not Req.	Not Req.	FS-3		Attach to R1A per instructions
C	Switch		Not Req.	76-2	SWB-2		Attach to R1A per instructions
R2A	50KΩ	1/2	220076-44	Q11-123	AG-44-S	B-31	Brightness Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R2A per instructions
R3A	1Meg	1/2	220076-19	Q11-137	AG-63-Z	B-70	Volume Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R3A per instructions
R4A	400KΩ	1/2	220076-39	Q11-133	AG-58-S	AN-59	AGC Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	500KΩ	1/2	220076-35	Q13-133	AG-58-S	B-60	Horizontal Drive Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not req.	Attach to R5A per instructions
R6	5000Ω	3	220076-20		58-5000	VK-135	Vertical Linearity Control Wire Wound
R7	1000Ω	4	220076-38		RTV-278	SVP-993	Focus Control Wire Wound
R8A	2.5Meg	1/2	220076-5		AG-84-S	AN-83	Height Control
B	Shaft		Not Req.		FKS-1/4	AK-1	Attach to R8A per instructions
R9A	1Meg	1/2	220076-12	Q11-137	AG-61-S	B-69	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R9A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	IRC PART No.	IDENTIFICATION CODES All resistors ± 10% unless other wise specified
R10	3300Ω	1/2	230104-68	BTS-3900	Antenna Isolation
R11	22KΩ	1/2	230104-78	BTS-22K	RF Amp. Grid
R12	10KΩ	1	230104-74	BTS-10K	AGC Network
R13	10KΩ	1	230105-74	BTA-10K	RF Amp. Screen
R14	10KΩ	1	230105-75	BTA-10K	RF Amp. Screen
R15	25K Ω	1			Voltage Divider See Note 1.
R16	3900Ω	1		BTS-3900	RF Coil Shunt
R17	1000Ω	1	230104-62	BTS-1000	RF Amp. Plate Decoupling
R18	100KΩ	1	230104-86	BTS-100K	Mixer Grid
R19	220KΩ	1	230104-90	BTS-220K	Mixer Grid
R20	47KΩ	1	230104-82	BTS-47K	Mixer Plate
R21	22KΩ	2	230104-78	BTS-22K	Osc. Grid
R22	6800Ω	1		BTA-6800	Osc. Plate
R23	2200Ω	1		BTA-2200	Voltage Divider
R24	2700Ω	1		BTS-2700	Decoupling
R25	1800Ω	1		BTA-1800	Decoupling
R26	100KΩ	1/2	230104-86	BTS-100K	1st. Video IF Amp. Grid
R27	68Ω	1	230104-48		1st. Video IF Amp. Cathode See Note 1.
R28	100Ω	1/2	230104-50	BTS-100	1st. Video IF Amp. Decoupling

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAGNAVOX PART No.	IRC PART No.	IDENTIFICATION CODES
R29	1000Ω	1/2	230104-62	BTS-1000	AGC Network
R30	1000Ω	1/2	230104-62	BTS-1000	AGC Network
R31	10KΩ	1/2	230104-74	BTS-10K	2nd. Video IF XFMR Shunt
R32	88Ω	1	230104-48		2nd. Video IF Amp. Cathode See Note 1.
R33	100Ω	1/2	230104-50	BTS-100	Decoupling
R34	3300Ω	1/2	230104-68	BTS-3300	3rd. Video IF XFMR Shunt
R35	68Ω	1/2	230104-48		3rd. Video IF Amp. Cathode SeeNote 1.
R36	100Ω	1/2	230104-50	BTS-100	Decoupling
R37	3900Ω	1/2	230104-69	BTS-3900	4th. Video IF XFMR Shunt
R38	150Ω	1/2	230104-52	BTS-150	4th. Video IF Amp. Cathode
R39	100Ω	1/2	230104-50	BTS-100	Decoupling
R40	33Ω	1	230104-44		Video Amp. Cathode
R41	3900Ω	1/2		BTA-3900	Video Amp. Plate
R42	270Ω	1/2	230104-55	BTS-270	Voltage Divider
R43	18KΩ	2	230106-77	BTB-18K	Video Output Cathode
R44	10KΩ	1/2	230104-74	BTS-10K	Peaking Coil Shunt
R45	5600Ω	1/2	230105-71	BTA-5600	Video Output Plate
R46	5600Ω	1/2	230105-71	BTA-5600	Video Output Plate
R47	1.8Meg	1/2	230104-101	BTS-1.8Meg	AGC Network
R48	100KΩ	1/2	230104-86	BTS-100K	AGC Amp. Plate
R49	18KΩ	1/2	230104-77	BTS-18K	AGC Network
R50	6800Ω	1/2	230104-72	BTS-6800	AGC Network
R51	560KΩ	1/2	230104-95	BTS-560K	AGC REctifier Cathode
R52	470KΩ	1/2	230104-94	BTS-470K	Voltage Divider
R53	2.2Meg	1/2	230104-102	BTS-2.2Meg	Isolation
R54	2.2Meg	1/2	230104-102	BTS-2.2Meg	Picture Tube Grid
R55	39KΩ	1		BTA-39K	Voltage Divider
R56	82KΩ	1/2		BTS-82K	Voltage Divider See Note 2.
R57	15KΩ	1/2	230104-76	BTS-15K	Decoupling
R58	270Ω	1/2		BTS-270	1st. Sound IF Amp. Cathode
R59	22KΩ	1/2	230104-78	BTS-22K	2nd. Sound IF XFMR Shunt
R60	1000Ω	1/2	230104-62	BTS-1000	1st. Sound IF Amp. Decoupling
R61	100Ω	1/2	230104-50	BTS-100	2nd. SoundIF Amp. Cathode
R62	39KΩ	1/2		BTA-39K	3rd. Sound IF XFMR Shunt
R63	1000Ω	1/2	230104-62	BTS-1000	Decoupling
R64	100KΩ	1/2	230104-86	BTS-100K	Limiter Grid
R65	10KΩ	1	230105-74	BTA-10K	Voltage Divider
R66	10KΩ	1	230105-74	BTA-10K	Limiter Decoupling
R67	100KΩ	1/2	230104-86	BTS-100K	Discriminator Diode Load
R68	100KΩ	1/2	230104-86	BTS-100K	Discriminator Diode Load
R69	68KΩ	1/2	230104-84	BTS-68K	DE Emphasis
R70	470Ω	1/2		BTS-470	AF Amp. Cathode
R71	1.5Meg	1/2		BTS-1.5Meg	AF Amp. Screen
R72	470KΩ	1/2	230104-94	BTS-470K	AF Amp. Plate See Note 1.
R73	470KΩ	1/2	230104-94	BTS-470K	Output Grid
R74	330Ω	1		BTA-330	Output Cathode
R75	2.2Meg	1/2	230104-102	BTS-2.2Meg	Feedback Network
R76	2.2Meg	1/2	230104-102	BTS-2.2Meg	Feedback Network
R77	10KΩ	1/2	230104-74	BTS-10K	Isolation
R78	680KΩ	1/2	230104-96	BTS-680K	Sync. Amp. Cathode
R79	27KΩ	1/2		BTS-27K	Sync. Amp. Plate
R80	1Meg	1/2	230104-98	BTS-1Meg	Sync. Separator Grid
R81	220Ω	1/2	230104-54	BTS-220	Sync. Separator Cathode
R82	22KΩ	1/2	230104-78	BTA-22K	Sync. Separator Plate
R83	3.9Meg	1/2	230105-105	BTS-3.9Meg	Sync. Clipper Grid
R84	2200Ω	1/2		BTA-2200	Sync. Clipper Cathode
R85A	22KΩ	1/2		BTS-22K	Integrator Network
B	8200Ω	1/2	●250186-1	BTS-8200	Integrator Network
C	8200Ω	1/2		BTS-8200	Integrator Network
R86	1Meg	1/2	230104-98	BTS-1Meg	Vertical Osc. Grid
R87	4.7Meg	1/2	230104-106	BTS-4.7Meg	Voltage Divider
R88	100KΩ	1	230104-86	BTS-100K	Voltage Divider
R89	3900Ω 5%	1		BTA-3900-5%	Vertical Peaking
R90	270KΩ	1/2	230104-91	BTS-270K	Vertical Osc. Plate
R91	2.2Meg	1/2	230104-102	BTS-2.2Meg	Vertical Output Grid
R92	820Ω	1/2	230105-61	BTA-820	Vertical Output Cathode
R93	220KΩ	1/2	230104-90	BTS-220K	Vertical Osc. Decoupling
R94	1Meg	1/2	230104-98	BTS-1Meg	Horiz. Feedback
R95	470KΩ	1/2	230104-94	BTS-470K	Horiz. Sync. Discriminator Diode Load
R96	470KΩ	1/2	230104-94	BTS-470K	Horiz. Sync. Discriminator Diode Load
R97	1000Ω	1/2		BTA-1000	Horiz. AFC Filter
R98	10KΩ	1/2	230104-74	BTS-10K	Horiz. AFC Filter
R99	470KΩ	1/2	230104-94	BTS-470K	Horiz. AFC Filter
R100	47KΩ	1/2	230104-82	BTS-47K	Horiz. Osc. Grid
R101	22KΩ	1/2	230104-78	BTS-22K	Horiz. Osc. Coil Shunt
R102	3900Ω	1	230105-69	BTA-3900	Horiz. Osc. Plate
R103	2.2Meg	1/2	230104-102	BTS-2.2Meg	Horiz. Discharge Grid
R104	100KΩ	1/2	230104-86	BTS-100K	Horiz. Discharge Plate
R105	10KΩ	1/2	230104-74	BTS-10K	Horiz. Peaking
R106	100Ω	1/2	230104-50		Parasitic Suppressor
R107	1Meg	1/2	230104-98	BTS-1Meg	Horiz. Output Grid
R108	38KΩ	5			Horiz. Output Screen
R109	1Meg	1	230105-98		HV Filter
R110	800Ω	10	240035-8	1 3/4A-800	Voltage Divider
R111	900Ω	10	240035-13	1 3/4A-900	Voltage Divider
R112	4700Ω	1	230105-70	BTA-4700	Voltage Divider
R113	8200Ω	2		BTB-8200	Voltage Divider
R114	270Ω	1/2		BTS-270	Voltage Divider
R115A	400Ω	10	240069-1	† 1 3/4AA-800	Voltage Divider
R115B	400Ω	10			Voltage Divider

† Slider to read 400Ω from each end
● Items R85A, R85B, R85C, C71A, C71B, C71C, are combined in one unit
Note 1 Some Models use resistors in parallel to obtain desired value
Note 2 Some Models use resistors in series to obtain desired value

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MAGNAVOX PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	780VCT	5VAC	6.3VAC	300060-1		P-3067	TP-355
	② 2.1A	.250ADC	③3A	④10A				
T2	117VAC	620VCT	5VAC	6.3VAC		PM 8407	P-2950	PH-50A
	②.425A	.050AVC	③2A	④.85A				

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA MAGNAVOX PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T3	140Ω	1.3KΩ	320030-6	A-8122	V-4900 ①	TB0-1 ①	Vert. Block Osc. Trans.
T4	310Ω Tap 25.5Ω	10.5Ω Tap .7Ω & 8.3Ω SEC.2 0Ω	320055-1		HVO-7		Horiz. Output Trans.
T5	825Ω	13Ω	320056-3B	A-8112①	A-3036	TSO-5 ①	Vert. Output Trans.
T6A	13Ω		320462-5	DY-8	MDF-70		Horiz. Deflection Coils
B	47Ω						Vert. Deflection Coils
T7	190Ω		360477-2				Focus Coil

① Drill One New Mounting Hole

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA MAGNAVOX PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T8	6.3KΩ	3.5Ω	410Ω	.4Ω		A-3849①	A-3019①	RO-9①	① Drill One New Mounting Hole

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	REPLACEMENT DATA MAGNAVOX PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	2000Ω	3.5Ω		ST-173 Mod. F12-S	12E2000S	
	CONE DIA.	V. C. DIA.				
SP2	12"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA MAGNAVOX PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.250A	56Ω	1 Henries	320041-2A	C-2326	C-2994	TR-3300①	

① Drill One New Mounting Hole

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MAGNAVOX PART No.	MERIT PART No.	IRC PART No.	NOTES
L2	Ant. Trans.	.1Ω	0Ω				
L3	Ant. Coils	0Ω					
L4	RF Coils	0Ω					
L5	Mixer Grid Coils	0Ω					
L6	Osc. Coils	0Ω					
L7	Fil. Choke	.2Ω				CLA	.47 Microhenries
L8	Fil. Choke	.2Ω				CLA	.47 Microhenries
L9	1st. Video IF	.5Ω					
L10	2nd. Video IF	.5Ω	.5Ω	360461-2			
L11	Adj. Video trap	.1Ω		360484-1			
L12	3rd. Video IF	.5Ω	.5Ω	260461-2	TV-102		
L13	Adj. Sound trap	.1Ω		360484-1			
L14	4th. Video IF	.5Ω	.5Ω	360461-2	TV-103		
L15	Sound Trap	.1Ω		360484-1			
L16	RF Choke	5.6Ω		360372-4		CL-1	6.8 Microhenries
L17	Peaking Coil	7Ω		360443-9	TV-185		253 Microhenries Green Dot
L18	4.5MC Trap	1Ω		360483-1			
L19	Peaking Coil	4Ω		360443-7	TV-181		97 Microhenries Red Dot
L20	Peaking Coil	5.5Ω		360443-12	TV-184		132 Microhenries Yellow Dot
L21	Peaking Coil	2.5Ω		360443-11	TV-180		38 Microhenries Orange Dot
L22	1st. Sound IF	.5Ω	.5Ω	360461-2			
L23	2nd. Sound IF	.1Ω	.1Ω	360332-12	TV-105		
L24	3rd. Sound IF	.1Ω	.1Ω	360332-12	TV-105		
L25	Discr. Trans.	.1Ω	.1Ω	360332-13	TV-106		
L26	Horiz. Osc.	70ΩCT	40Ω	360435-1		"A" to Ground 12Ω	
L27	RF Choke	22Ω		360451-1			
L28	Width Coil	1.1Ω		360357-1			
L29	Horiz. Lin.	8.1Ω		360358-1		Tap 5.2Ω	

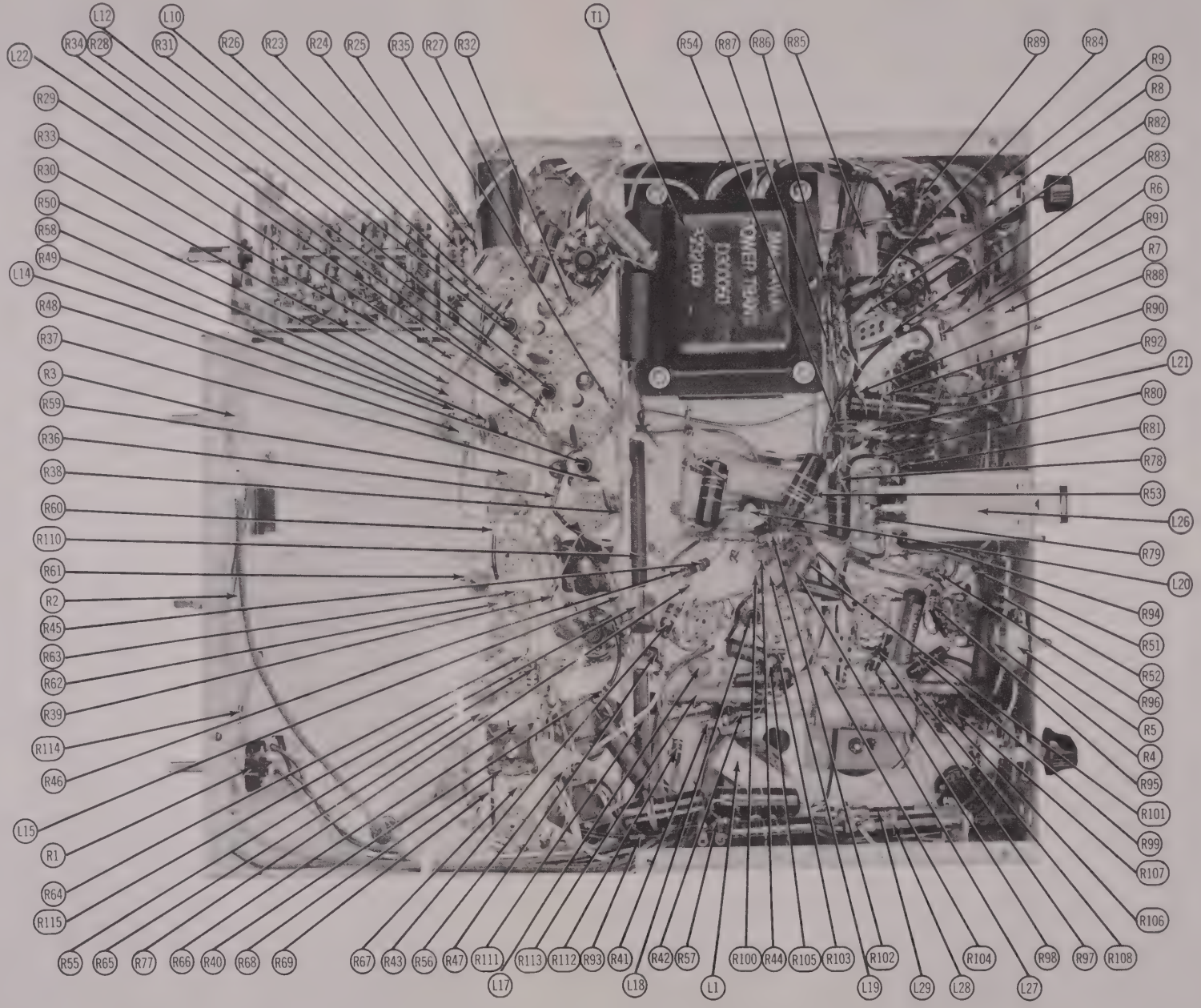
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA MAGNAVOX PART No. FUSE	MAGNAVOX PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG Pigtail	5A	180475-2		318,005		
M2	3AG Pigtail	.250A	180475-1		318, 250		

MISCELLANEOUS

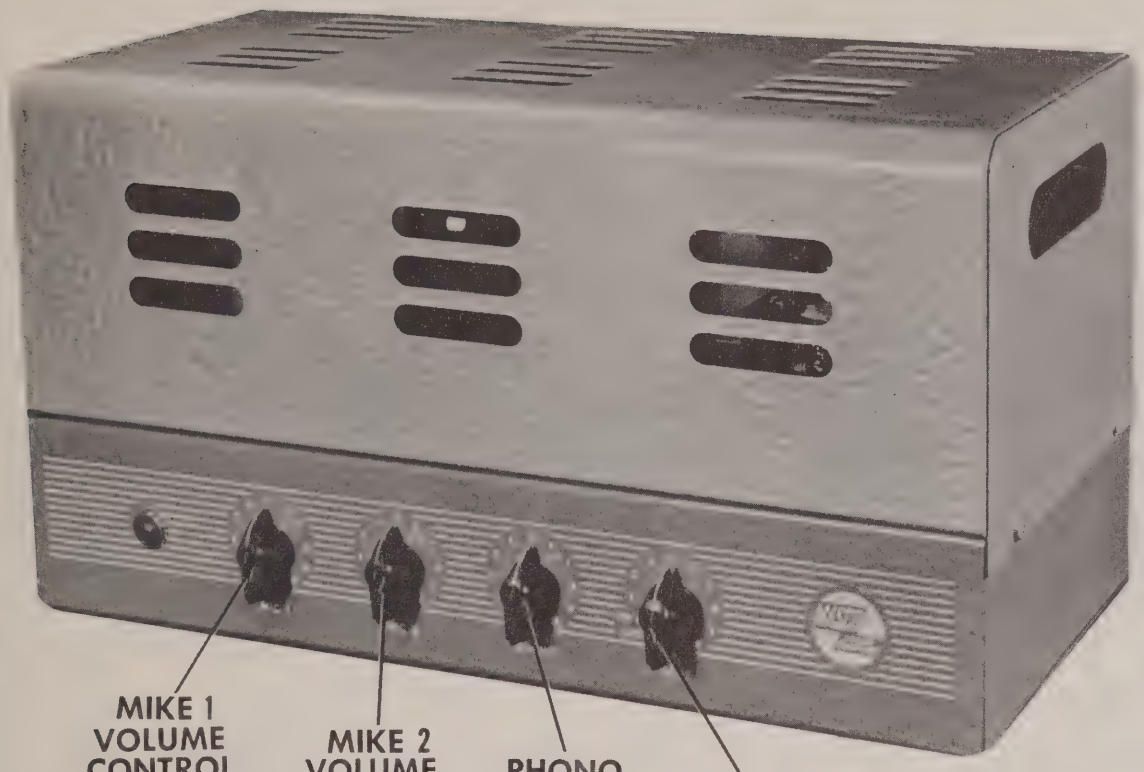
ITEM No.	PART NAME	MAGNAVOX PART No.	NOTES
M3	RF Tuner		
M4	5th. Video IF Crystal	360476-1	1N60
	Capacitor		5MMF
	Capacitor		10MMF
	Resistor		2.7KΩ
	Peaking		Orange Dot
	Peaking		Green Dot
M5	Switch		TV-Phono
M6	Ion Trap		

Video Det. Assy. Complete



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

MASCO
MODEL ME-27



MASCO
MODEL ME-27

TRADE NAME	Masco, Model ME-27
MANUFACTURER	Mark Simpson Mfg. Co., Inc., 32-28 49th. St., Long Island City, New York
TYPE SET	AC Operated Audio Amplifier
TUBES (SIX)	Types 6SC7 Mic. 1 and 2 Pre-Amp., 6SJ7 1st AF Amp., 6SC7 2nd AF-Phase Inv., (2) 6L6G Power Output, 5V4G Rectifier
POWER SUPPLY	110-120 Volts AC RATING .95 Amp. at 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Mic. 1 and Mic. 2 Pre-Amplifier	6SC7	6SC7	8S	
V2	1st. AF Amplifier	6SJ7	6SJ7	8N	
V3	2nd. AF Amplifier-Phase Inverter	6SC7	6SC7	8S	
V4	Power Output	6L6G	6L6G	7AC	
V5	Power Output	6L6G	6L6G	7AC	
V6	Rectifier	5V4G	5V4G	5L	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	16	450		PRS450/16		BR1645A		TVA-1708	Filter
C2A	10	450		AFH2-31		UPT11145C		TVL-3776	▲ Decoupling
B	10	450							■ Decoupling
C	10	450							▲ Decoupling
C3	10	50		PRS50/10		BR105		TVA-1304	Power Output Cathode
C4	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C5	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C6	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C9	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Tone Comp. †
C10	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C11	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C12	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Line Filter

† Some models use .1MFD. in this application.

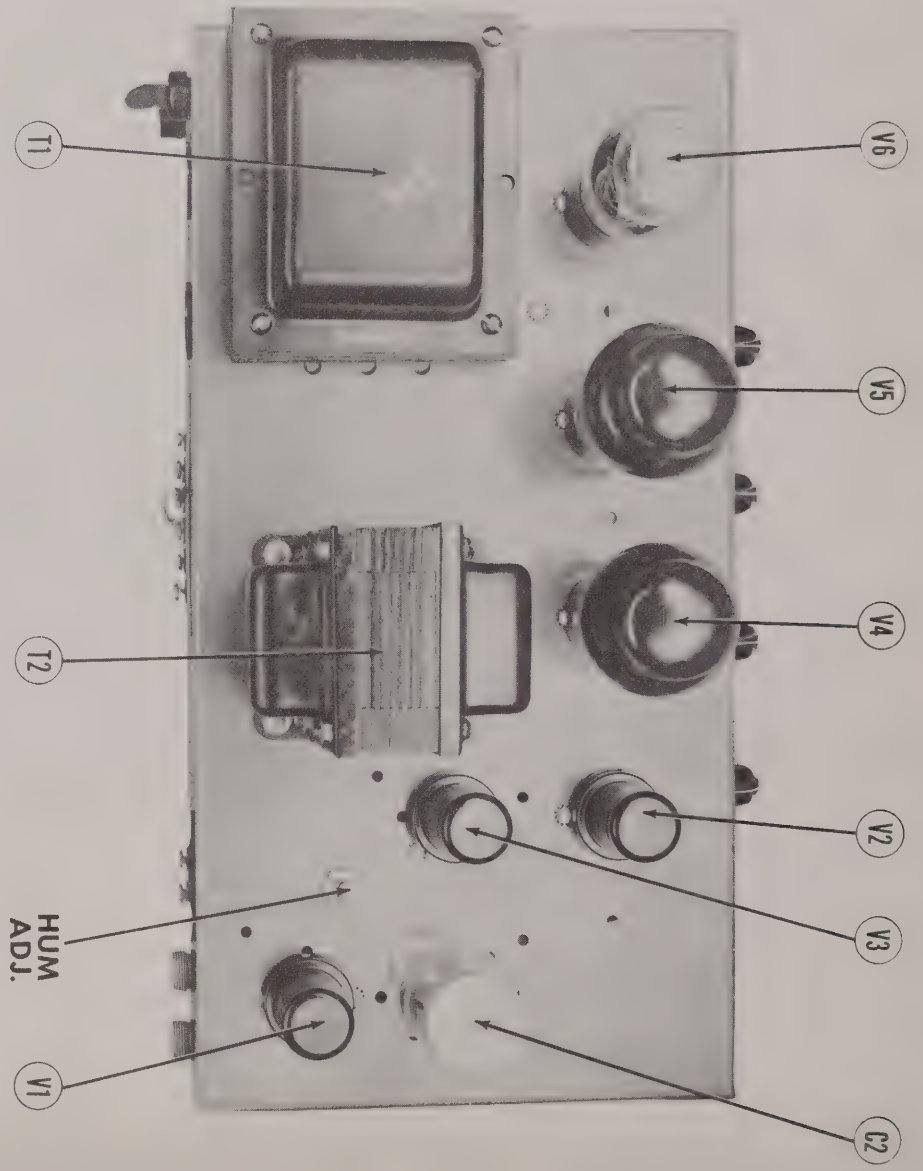
CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½		Q13-133	AG-60-Z	B-60-S	Tone Control
B	Shaft			Not req.	RS-2	Not req.	Attach to R1A per instructions
C	Switch			76-1	SWB	Not req.	Attach to R1A per instructions
R2A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	Phono Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R2A per instructions
R3A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	Mike 2 Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R3A per instructions
R4A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	Mike 1 Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R4A per instructions
R5	50Ω	2		W-50	43-50	VK-116	Hum Control - Wire Wound

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	IDENTIFICATION CODES
R6	5.6Meg	½		BTS-5.6Meg	Mike 1 Pre-Amp. Grid
R7	270KΩ	½		BTS-270K	Mike 1 Pre-Amp. Plate
R8	5.6Meg	½		BTS-5.6Meg	Mike 2 Pre-Amp. Grid
R9	270KΩ	½		BTS-270K	Mike 2 Pre-Amp. Plate
R10	270KΩ	½		BTS-270K	1st. AF Amp. Grid
R11	270KΩ	½		BTS-270K	1st. AF Amp. Grid
R12	1000Ω	½		BTS-1000	1st. AF Amp. Cathode
R13	47KΩ	½		BTS-47K	1st. AF Amp. Plate
R14	1Meg	½		BTS-1Meg	1st. AF Amp. Grid
R15	1000Ω	½		BTS-1000	2nd. AF Amp. and Phase Inverter Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MASCO PART No.	IRC PART No.	
R16	47KΩ	½		BTS-47K	2nd. AF Amp. Plate
R17	10KΩ	½		BTS-10K	Phase Inverter Grid - See Note
R18	47KΩ	½		BTS-47K	Phase Inverter Plate
R19	270KΩ	½		BTS-270K	Output Grid
R20	200Ω	10		1 3/4A-200	Output Cathode - Wire Wound
R21	270Ω	½		BTS-270	Output Grid
R22	5000Ω	5		1 3/4A-5000	Output Screen - Wire Wound
R23	12KΩ	½		BTS-12K	Decoupling
R24	12KΩ	½		BTS-12K	Decoupling
R25	100Ω	10		1 3/4A-100	Surge Limiter - Wire Wound

Note: Some models use 12KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 95A	720VCT .115ADC	5VAC @ 2A	6.3VAC @ 2.7A	A-25	PM8412	P-2953 ③	PHO-120B

② Add series resistor to reduce plate voltage.
③ Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	10K CT	2Ω 4Ω 8Ω 15Ω 200Ω	240Ω CT	.4Ω .5Ω .7Ω .9Ω 21Ω	O-25			PCO-150 ①	① Drill new mounting holes.

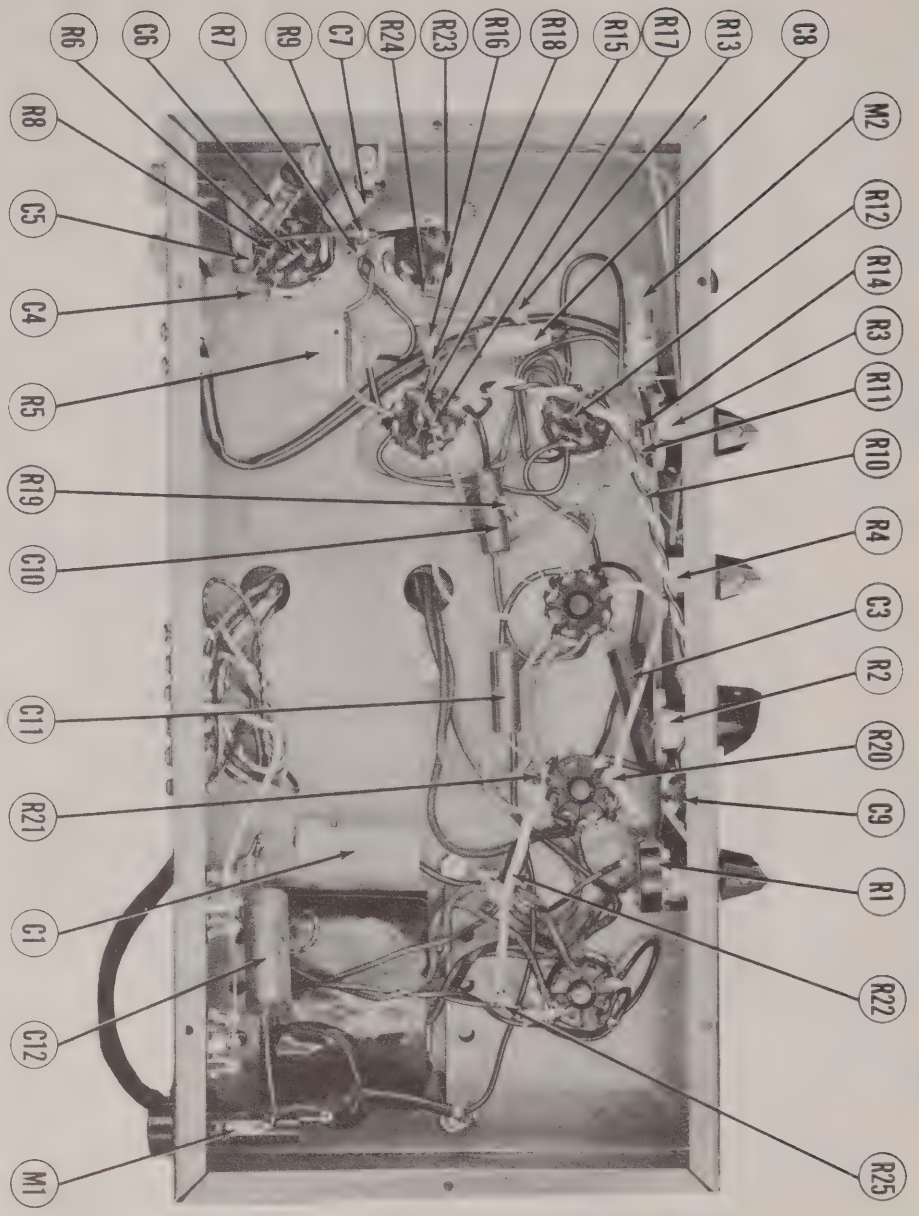
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			MASCO PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	2Amp.			312002	341001	

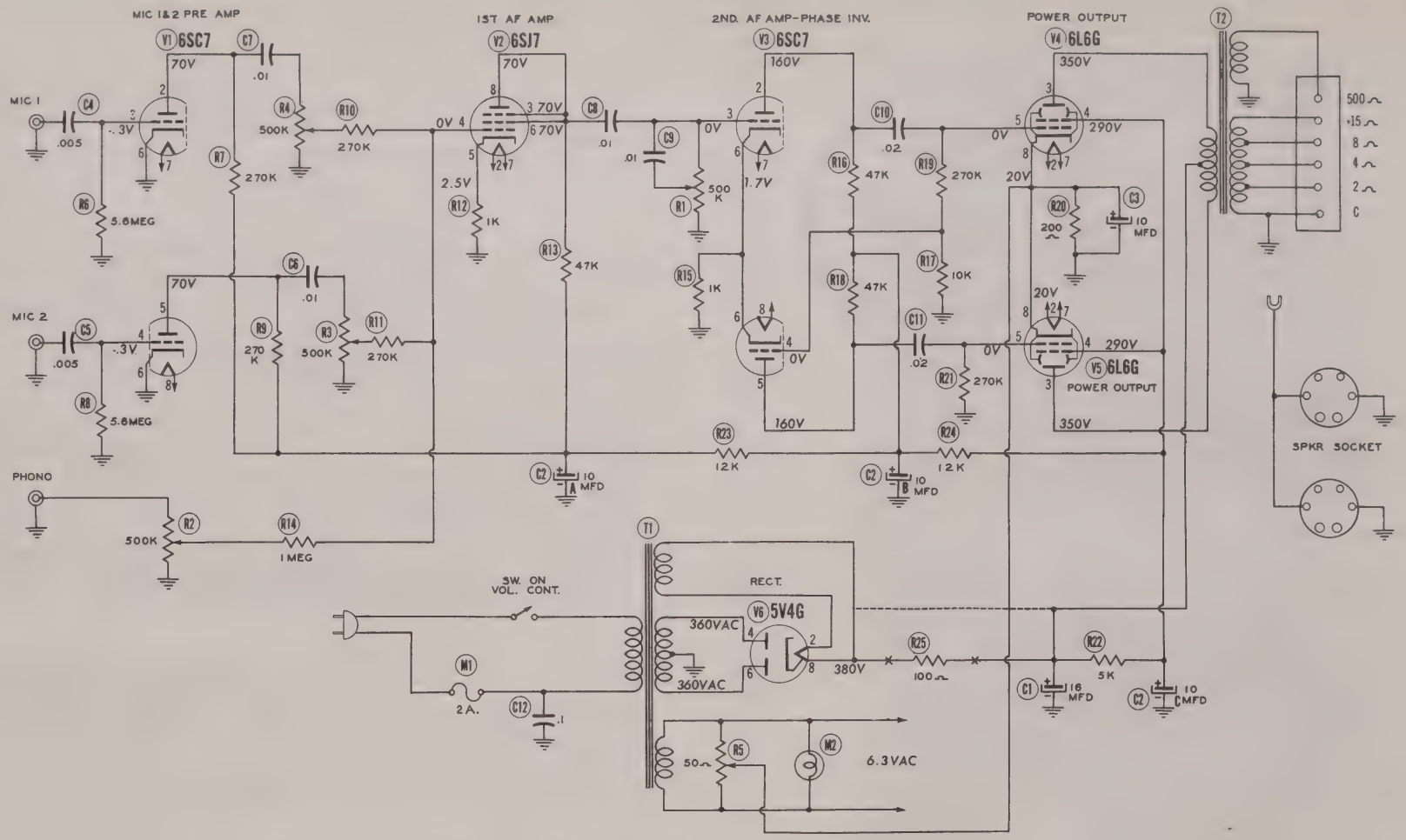
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
M2	Bayonet	6-8	.15	Brown			Type # 47

CHASSIS—BOTTOM VIEW



MASCO MODEL ME-27



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SC7	0Ω	†300KΩ	5Meg	5Meg	†300KΩ	0Ω	220Ω	220Ω
V 2	6SJ7	0Ω	220Ω	†65KΩ	160KΩ	1KΩ	†65KΩ	220Ω	†65KΩ
V 3	6SC7	0Ω	†65KΩ	460KΩ	10KΩ	†65KΩ	1KΩ	220Ω	220Ω
V 4	6L6G	0Ω	220Ω	†315Ω	†5KΩ	280KΩ	Inf.	220Ω	200Ω
V 5	6L6G	0Ω	220Ω	†310Ω	†5KΩ	270KΩ	Inf.	220Ω	200Ω
V 6	5V4G	Inf.	60KΩ	Inf.	46Ω	Inf.	50Ω	Inf.	60KΩ

† MEASURED FROM PIN 8 OF V6

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155-11

1 - DC Voltage measurements are at 20,000 ohms per volts; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3- Measured values are from socket pin to common negative.
4- Line voltage maintained at 117volts for voltage readings.
5- Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6- All controls at minimum, proper output load connected.

MITCHELL
MODELS 1252, 1253

MITCHELL
MODELS 1252, 1253

MITCHELL, MODEL 1252

TRADE NAME	Mitchell, Models 1252, 1253
MANUFACTURER	Mitchell Mfg. Co., 2525 N. Clybourn Ave., Chicago, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12A8GT Converter, 12J7GT IF Amp., 12Q7GT DET.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC — RATING .15 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. output.	"	A5	"

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PARTS LIST AND DESCRIPTIONS

MITCHELL MODEL 1252

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MITCHELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12A8GT	12A8GT	8A	
V2	IF Amplifier	12J7GT	12J7GT	7R	
V3	Det.-AVC-AF	12Q7GT	12Q7GT	7V	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MITCHELL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	60	150	N-7204	PRS150/50-30		EDL42215		TVA-2450	Filter (Blue) †
B	20	150							Filter (Red) †
C2	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	Osc. Anode
C4	.05	400	N-1346	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C5	100		N-6015	SI100	D6-101	5W5T1	GPIK-101	5GA-T1	Diode RF Filter
C6	100		N-7549	SI100NP0	TCZ-100	5R5T1	NP0-333-101	5TCC-T1	Fixed Trimmer *
C7	.005	600	N-4894	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C8A	.005								Audio Coupling
B	250		•N-8215		•PC-71				AF Amp. Plate
C									Power Output Grid *
C9	.01	400	N-1344	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Power Output Plate
C10	.05	400	N-1346	P488-05	DF-503	PTE4S5		4TM-S5	Rectifier Plate
C11	.05	200	N-1345	P288-05	DF-503	PTE4S5		2TM-S5	Line Isolation

* Not used in all models.
† Some models use 50-30MFD in this application. (N-7889)
‡ Some models use .02MFD in this application. (N1376)
• Items C8A, C8B, C8C, R10A, R10B are combined in one unit in some models. In other models C8A is .01MFD, C8B is 250MMF and C8C is not used.

CONTROLS

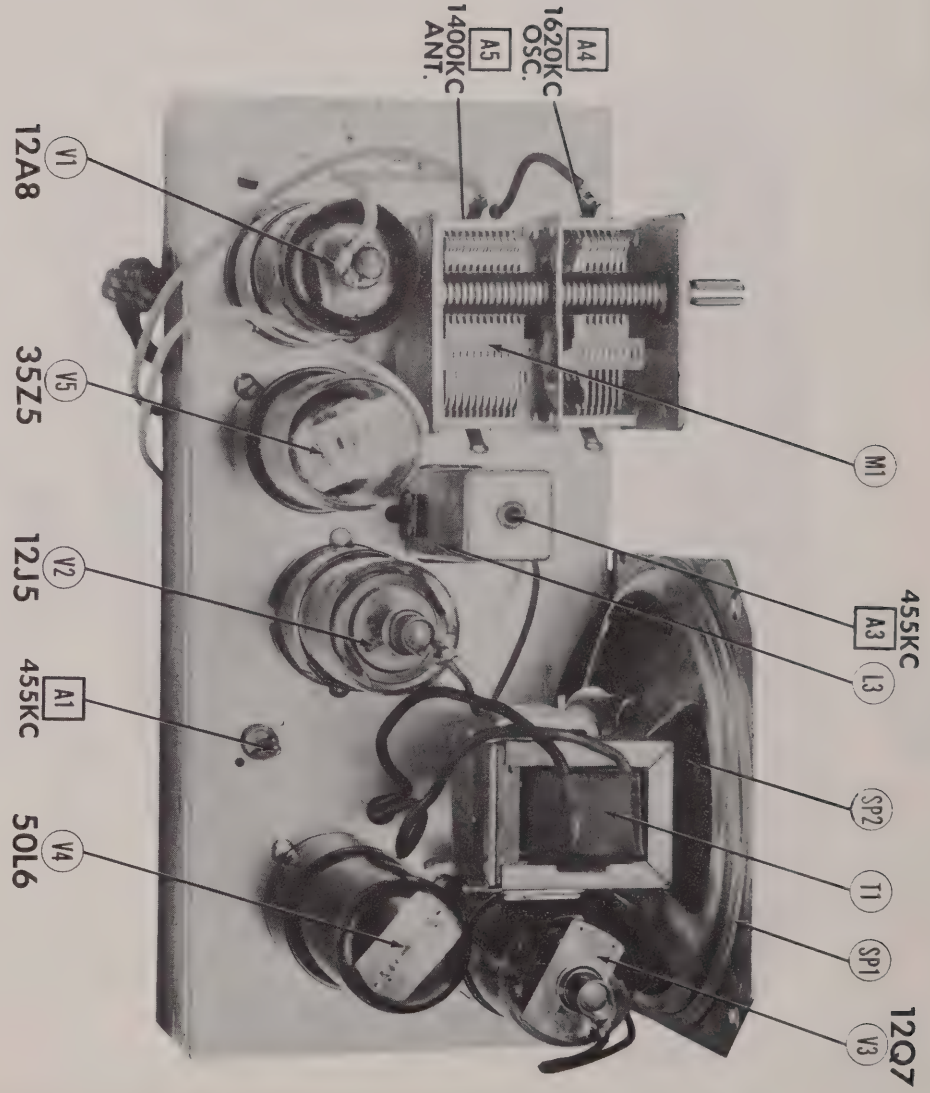
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MITCHELL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	N-7890	Q13-133	AG-60-Z	B-60-S	Volume Control and Switch
B	Shaft		Not req.	Not req.	KSS-3	Not Req.	Attach to R1A as per instructions
C	Switch		Not req.	76-1	SWB	Not Req.	Attach to R1A as per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MITCHELL PART No.	IRC PART No.	IDENTIFICATION CODES
R2	47KΩ	½	N-4063	BTS-47K	Osc. Grid
R3	22KΩ	½	N-4025	BTS-22K	Osc. Anode
R4	10Meg	½	N-1623	BTS-10Meg	AVC Network
R5	1Meg	½	N-1262	BTS-1Meg	AVC Filter
R6	4.7Meg	½	N-4061	BTS-4.7Meg	IF Amp. Grid
R7	1.5Meg	½		BTS-1.5Meg	AVC Network - See Note 1
R8	47KΩ	½	N-4063	BTS-47K	AVC Network
R9	4.7Meg	½	N-4061	BTS-4.7Meg	AF Amp. Grid - See Note 2
R10A	220KΩ	½	•N-8215	BTS-220K	AF Amp. Plate
B	470KΩ	½		BTS-470K	Output Grid
R11	220Ω	1	N-4024	BTS-220	Output Cathode
R12	1500Ω	1	N-4900	BTA-1500	Filter - See Note 3

• Items R10A, R10B, C8A, C8B, C8C are combined in one unit in some models.
Note 1 Some models use 1Meg resistor in this application.
Note 2 Some models use 6.8Meg resistor in this application.
Note 3 Some models use 1200Ω resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MITCHELL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.5KΩ	3.3Ω	225Ω	.6Ω	Part of N-7198 Part of ② N-7824	A-3332 ①	A-3025 ①		① Bend mounting tabs down, file out slots and mount on original bracket. ② Used with Alternate Speaker

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MITCHELL PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1 A	PM	3.3Ω	N-7198	ST-113 Model P-4X	4A1	
B	PM	3.7Ω	N-7824 ③	ST-113 Model P-4X	4A1	③ Alternate Speaker
	CONE DIA.	V. C. DIA.				
SP2 A	4"	9/16"				
B	4"	9/16"				

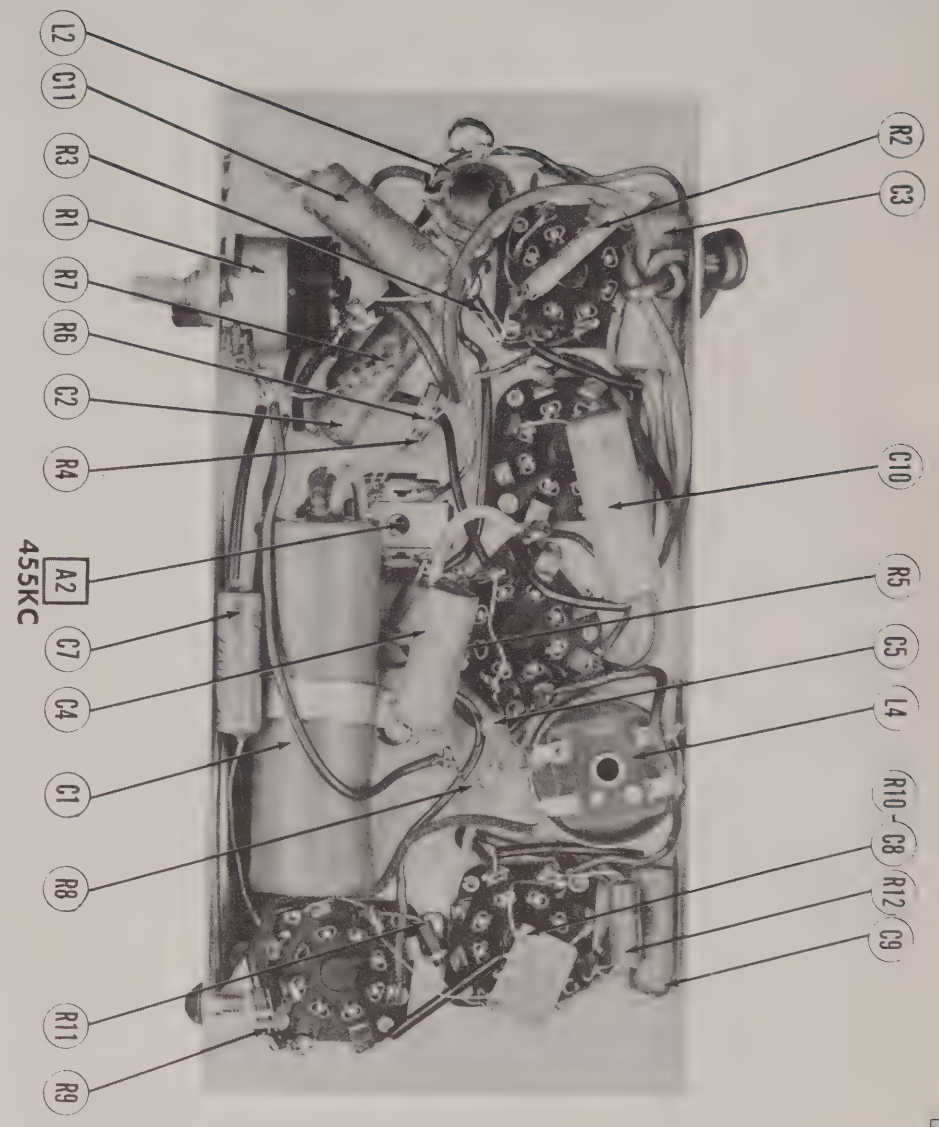
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MITCHELL PART No.	MERIT PART No.	
L1	Loop Ant.	3.4Ω		N8138	BC-381 BC-352	
L2	Osc. Coil	2.4Ω	7.8Ω	N8263		
L3	Input IF	16Ω	16Ω	N7981		
L4A	Output IF	24Ω	24Ω	N7542		
B	Output IF			N8150		Includes C10

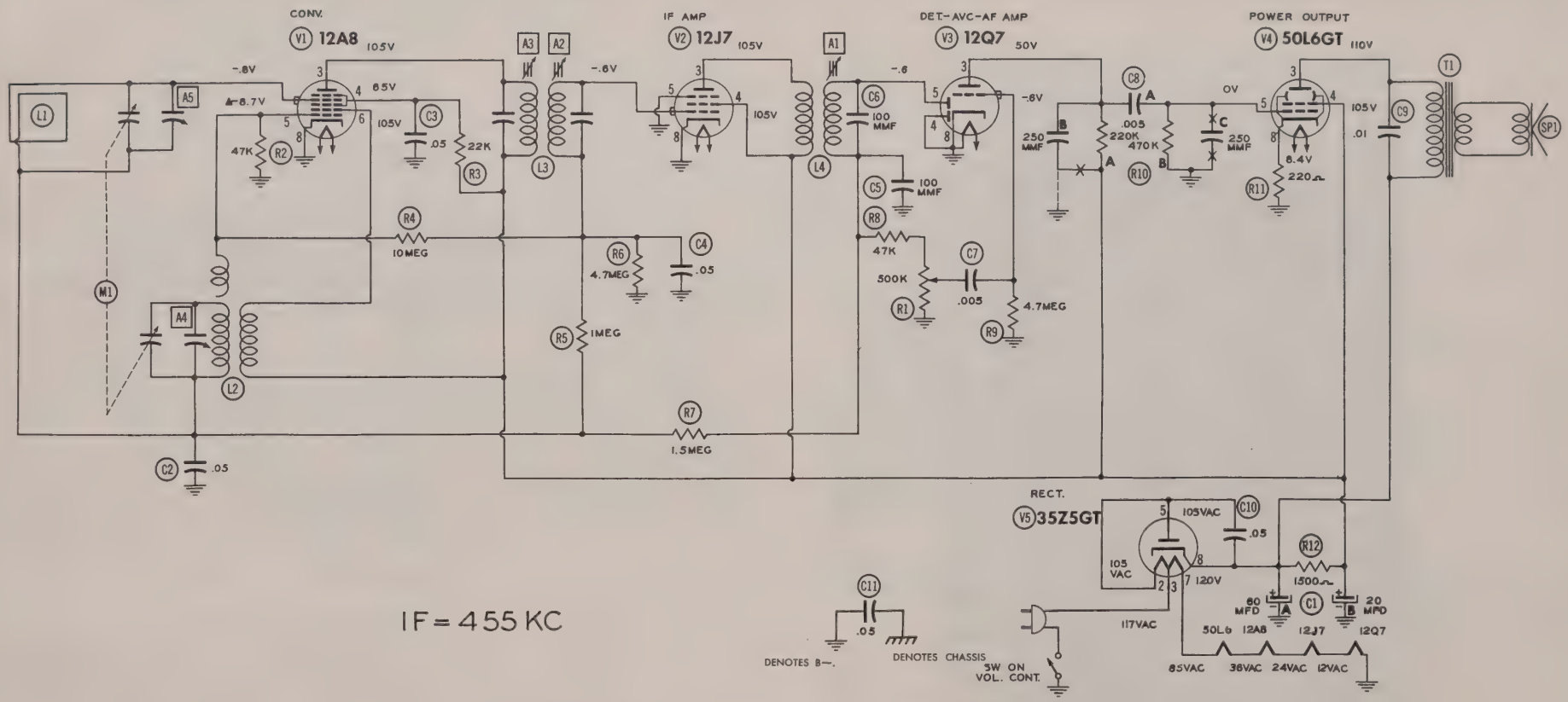
MISCELLANEOUS

ITEM No.	PART NAME	MITCHELL PART No.	NOTES
M1	2 Gang Var. Cap.	N-7141	(18-387MMF, 18-153MMF)

CHASSIS—BOTTOM VIEW



MITCHELL MODEL 1252



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12A8GT	■0Ω	36Ω	†1.5KΩ	†23KΩ	47KΩ	†1.5KΩ	24Ω	0Ω	1.5Meg
V 2	12J7GT	■0Ω	24Ω	†1.5KΩ	†1.5KΩ	0Ω	800KΩ	12Ω	0Ω	800KΩ
V 3	12Q7GT	■0Ω	12Ω	†220KΩ	0Ω	550KΩ	4.7Meg	0Ω	0Ω	4.7Meg
V 4	50L6GT	Inf.	86Ω	†225Ω	†1.5KΩ	470KΩ	†0Ω	36Ω	220Ω	
V 5	35Z5GT	Inf.	120Ω	105Ω	Inf.	120Ω	Inf.	86Ω	40KΩ	

▲ TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V5
■ MEASURED FROM CHASSIS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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155-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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MODEL PT-200

NORELCO
MODELS PT-200, PT-300

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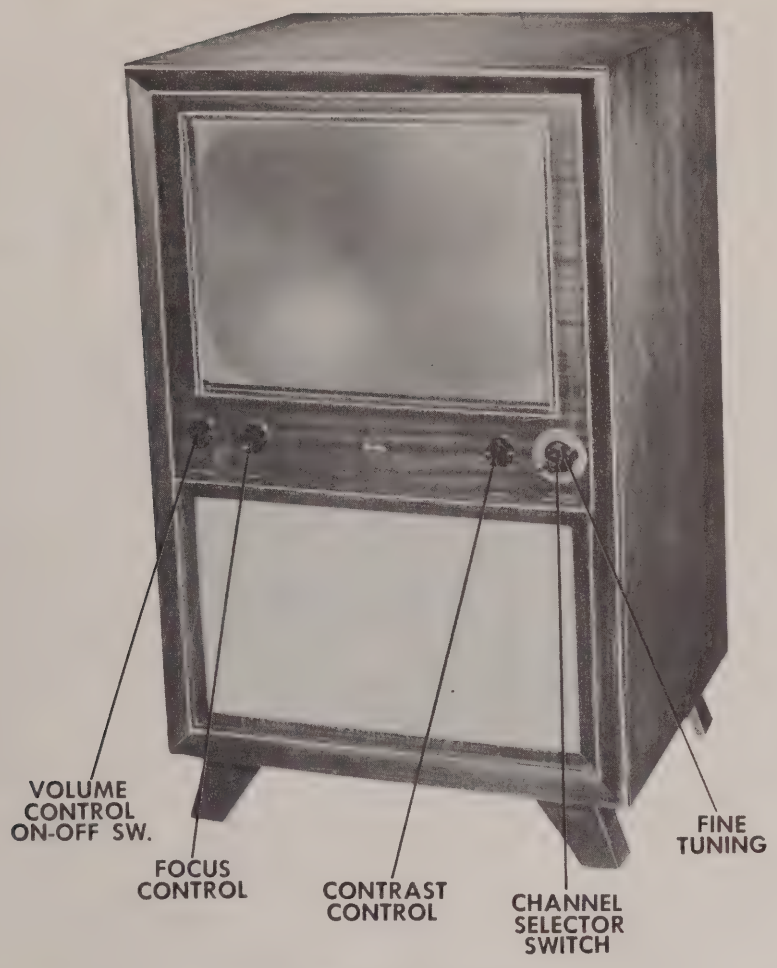
NORELCO
MODELS PT-200, PT-300



NORELCO
MODELS PT-200, PT-300

NORELCO MODEL PT-200

TRADE NAME	Norelco Models PT-200, PT-300		
MANUFACTURER	North American Philips Co., Inc. Mount Vernon, N.Y.		
TYPE SET	Projection Type Television Receiver		
TUBES	Twenty Three		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING	1.9Amp@ 117 Volts AC
TUNING RANGE	Channels 2 thru 13		

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 10
Horizontal Sweep Circuit Adjustments 10
Optical Adjustments 11
Parts List and Descriptions 14, 15, 16
Photographs
Cabinet-Rear View 10
Capacitor and Alignment Identification 4, 9
Photos (Cont.)
Chassis-Top View 3
High Voltage Supply 18
RF Tuner 13
Resistor and Inductor Identification 12, 17
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

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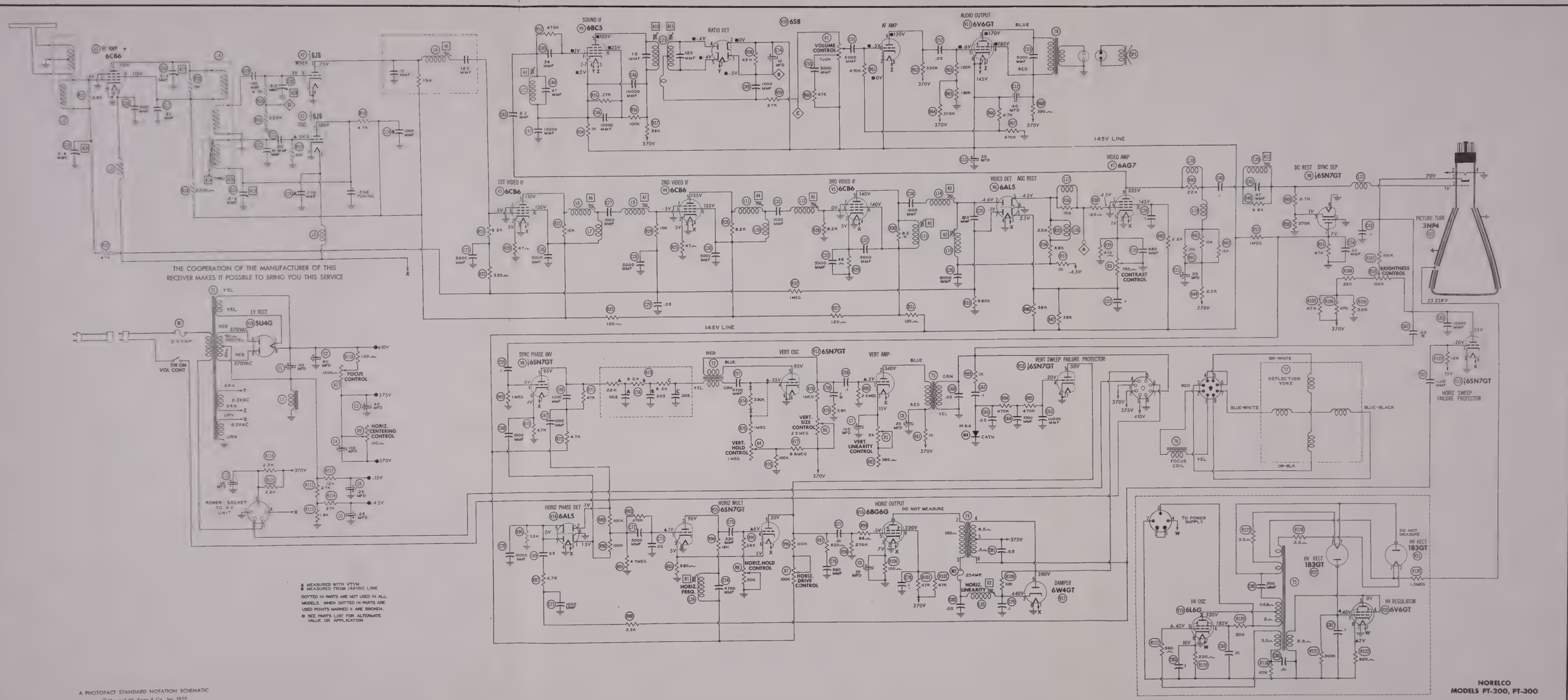
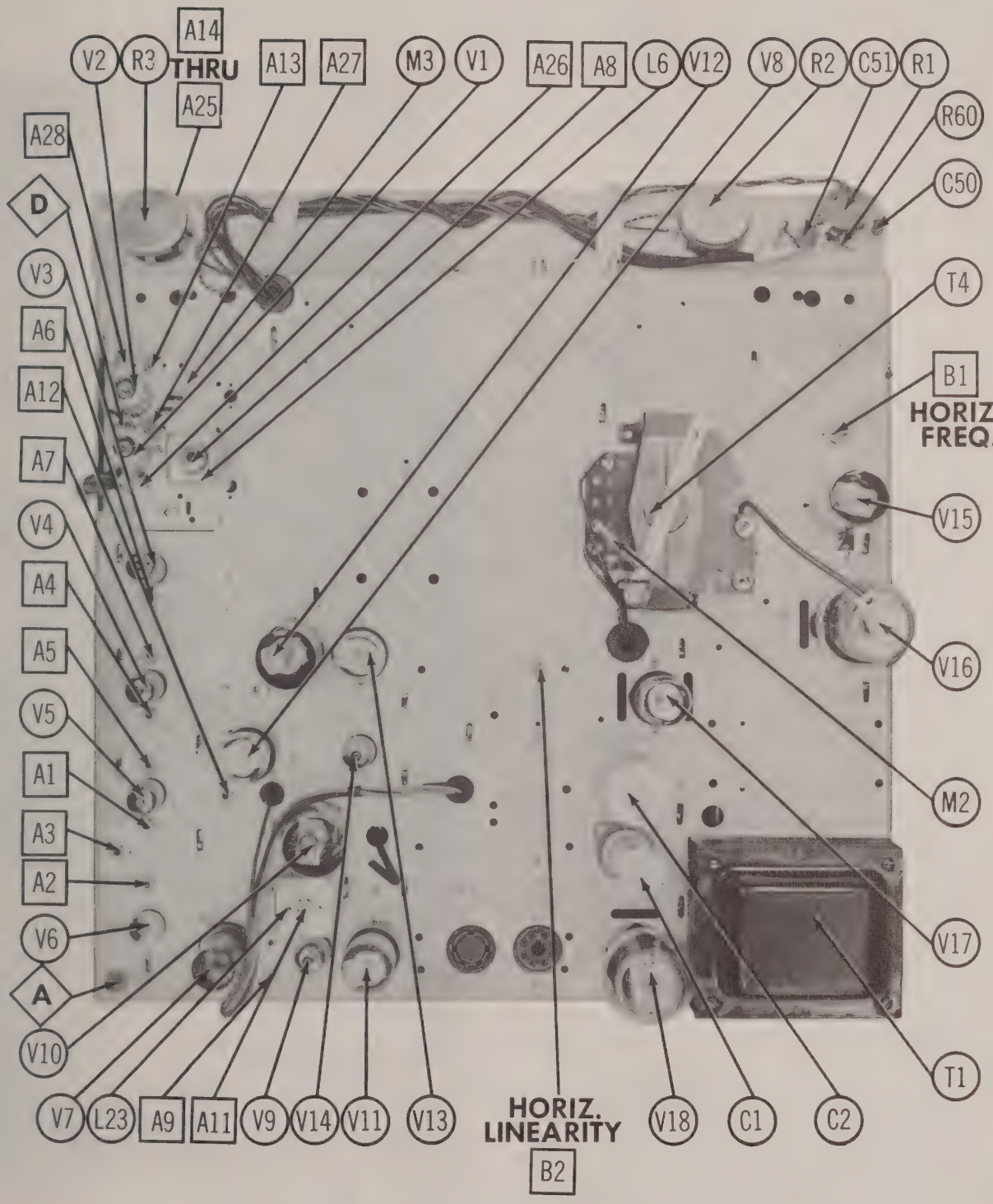
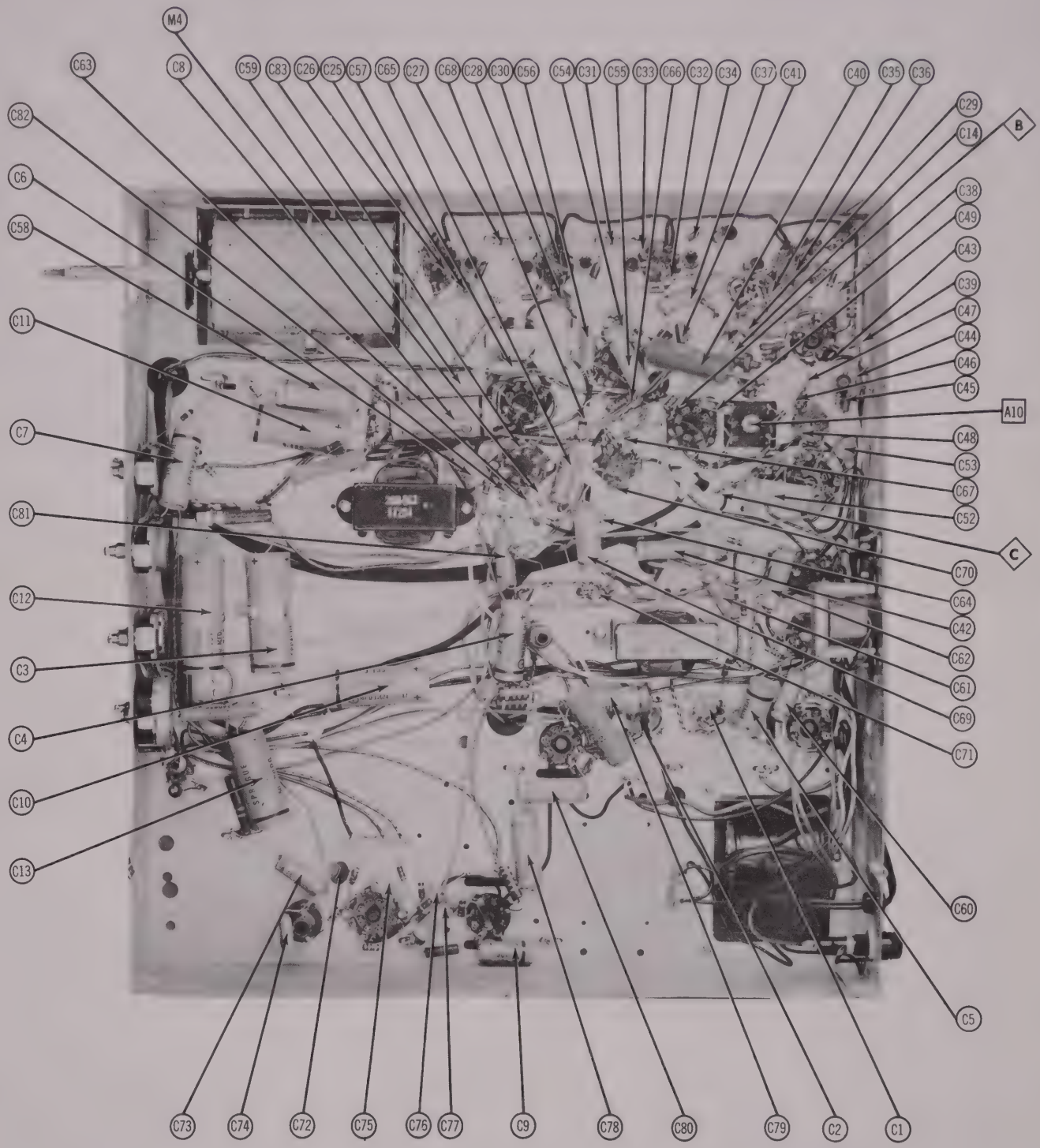


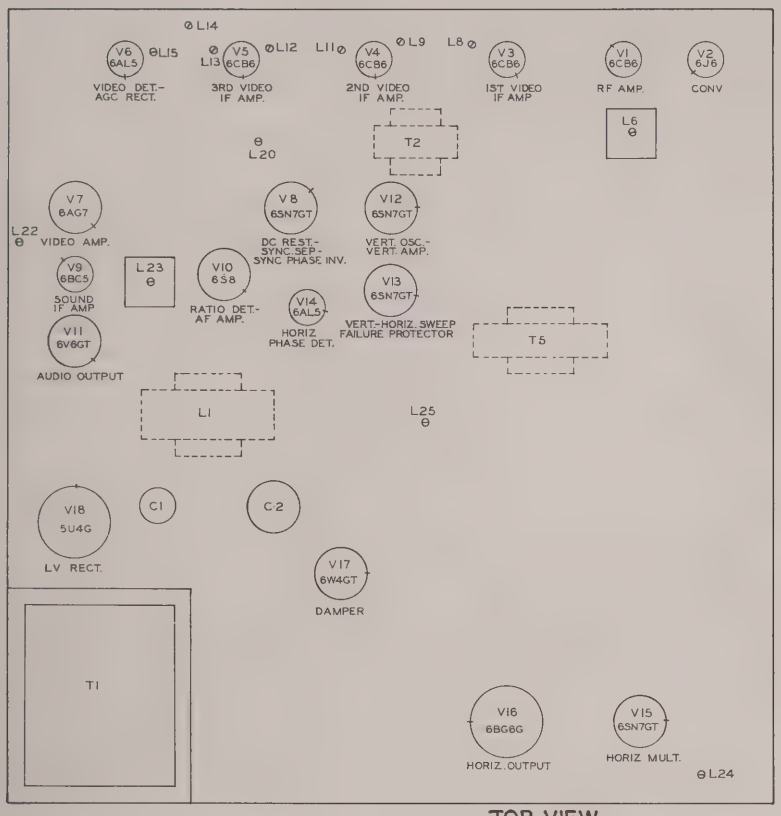
NORELCO
MODELS PT-200, PT-300

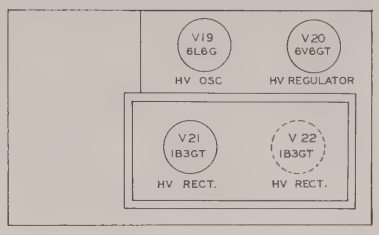


CHASSIS – TOP VIEW

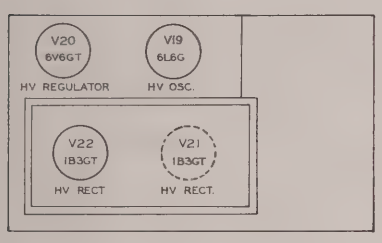


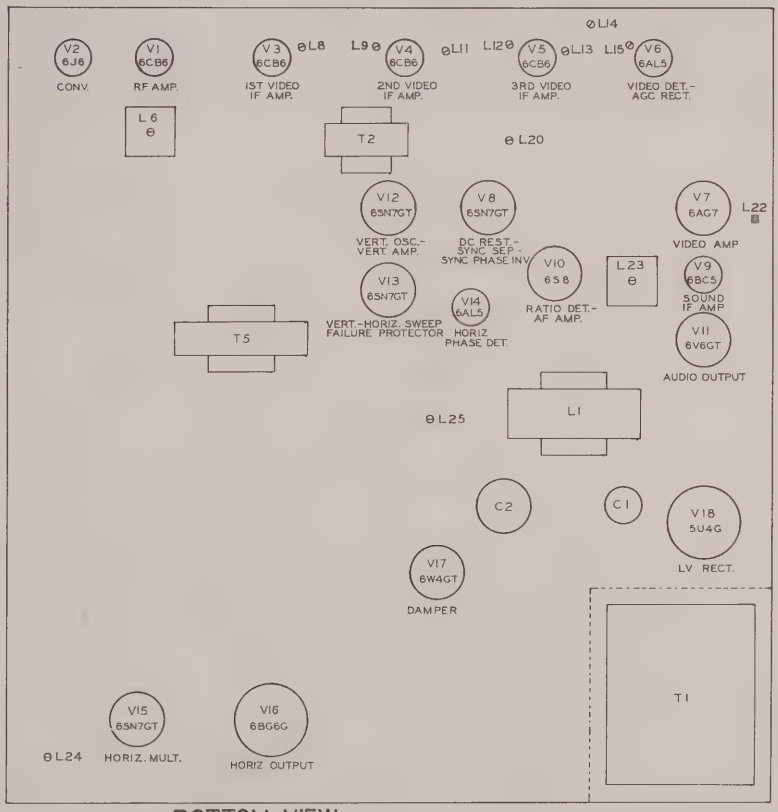
CHASSIS BOTTOM VIEW- CAPACITOR AND ALIGNMENT IDENTIFICATION





TOP VIEW





BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Remove the high voltage power supply plug and connect a jumper between Pins 1 and 5 of the plug socket.
Do not attempt to operate the set without the focus and deflection plug connected.

VIDEO IF ALIGNMENT

Remove the Converter tube, (V2) and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C29, connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	1000MMF	High side to pin 1, (grid) of 6CB6, (V5). Low side to chassis	24MC (10MC Swp.)	21.25 MC 22MC	Any	Vert. Amp. to point (A). Low side to chassis.	A1, A2	Turn A3 until the slug is centered in the coil. Adjust A1 and A2 for response curve similar to Fig. 1.
2.	"	"	"	21.25MC 22MC 25.75MC	"	"	A3	Adjust for response curve similar to Fig. 2
3.	"	High side to pin 1, (grid) of 6CB6, (V4). Low side to chassis.	"	21.25MC 22MC 25.75MC	"	"	A4, A5	Adjust for symmetrical response similar to Fig. 3.
4.	"	High side to pin 1, (grid) of 6CB6, (V3). Low side to chassis.	"	21.25MC 22MC 25.75MC	"	"	A6, A7	Adjust for symmetrical response similar to Fig. 4.
5.	"	High side to point (D). Low side to chassis.	"	21.25MC 22MC 25.75MC	"	"	A8	Adjust for respomse curve similar to Fig5. with 10% tilted top.

SOUND IF ALIGNMENT

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	1000MMF	High side to Point (A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A9, A10	Disconnect stabilizer capacitor C14. Adjust for maximum amplitude and symmetry as per Fig. 6.
7.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A11	Reconnect capacitor C14. Adjust A11 so 4.5MC occurs at center of crossover lines as per Fig. 7. SLIGHTLY retouch A 10 for maximum amplitude and straightness of crossover lines.

After alignment is completed and set is restored to normal operation, it may become necessary to retouch A11 to minimize intercarrier buzz.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	1000MMF	High side to Point (A). Low side to chassis.	Not used	4.5MC (400% Mod.)	Any	Vert. Amp. to Pin 1 of picture tube. Low side to chassis.	A12	Adjust for MINIMUM 400% indication or scope.

After alignment is completed, and set us restored to original operation, it may be necessary to retouch A12 to minimize 4.5MC interference in the picture, (grain appearance in horizontal lines.)

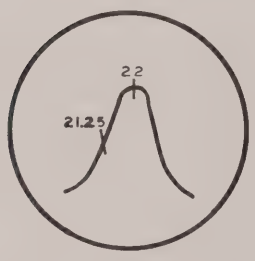


FIG.1

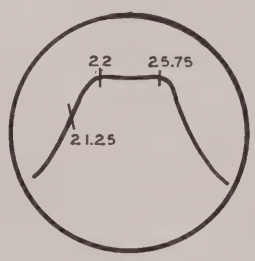


FIG.2.

FIG.3

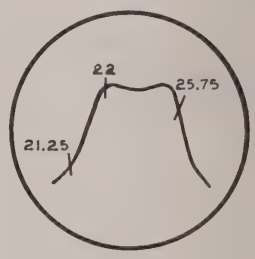


FIG.4

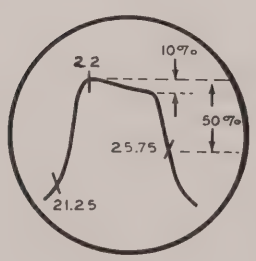


FIG.5

FIG. 6

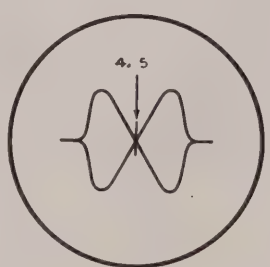


FIG. 7

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A13. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A13 will not bring all channels well within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Connect the syncronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp.)	211.25MC 215.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A14	Adjust to place video marker at 50% on response curve as shown in Fig. 8.
		207MC (10MC Swp.)	205.25MC 209.75MC	12		A15	
		201MC (10MC Swp.)	199.25MC 203.75MC	11		A16	
		195MC (10MC Swp.)	193.25MC 197.75 MC	10		A17	
		189MC (10MC Swp.)	187.25MC 191.75 MC	9		A18	
		183MC (10MC Swp.)	181.25 MC 185.75 MC	8		A19	
		177MC (10MC Swp.)	175.25 MC 179.75MC	7		A20	
		85MC (10MC Swp.)	83.25MC 87.75MC	6		A21	
		79MC (10MC Swp.)	77.25MC 81.75MC	5		A22	
		69MC (10MC Swp.)	67.25MC 71.75MC	4		A23	
		63MC (10MC Swp.)	61.25MC 65.75 MC	3		A24	
		57MC (10MC Swp.)	55.25MC 59.75MC	2		A25	

RF & MIXER ALIGNMENT

Connect the bias battery as during Video IF alignment, but reduce the voltage to 1.5.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (D). Low side to chassis.	A26, A27, A28	Adjust for response curve similar to Fig. 9 with markers above 90%.
11	"	"	213MC (10MC Swp.)	211.25MC 215.75MC	13	"		Check all channels for response curve similar to Fig. 9. If markers fall below 70% on any channel, make compromise adjustment of A26, A27 & A28 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC Swp.)	199.25MC 203.75MC	11			
			195MC (10MC Swp.)	193.25MC 197.75 MC	10			
			189MC (10MC Swp.)	187.25MC 191.75MC	9			
			183MC (10MC Swp.)	181.25MC 185.75MC	8			
			177MC (10MC Swp.)	175.25MC 179.75 MC	7			
			85MC (10MC Swp.)	83.25MC 87.75MC	6			
			79MC (10MC Swp.)	77.25MC 81.75MC	5			
			69MC (10MC Swp.)	67.25MC 71.75MC	4			
			63MC (10MC Swp.)	61.25MC 65.75MC	3			
			57MC (10MC Swp.)	55.25MC 59.75MC	2			

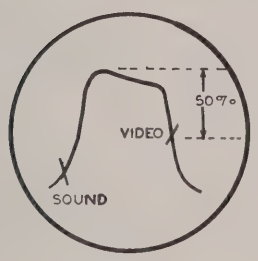


FIG.8

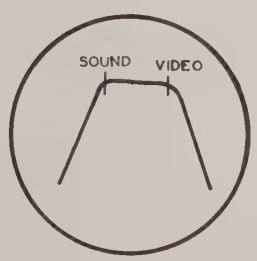


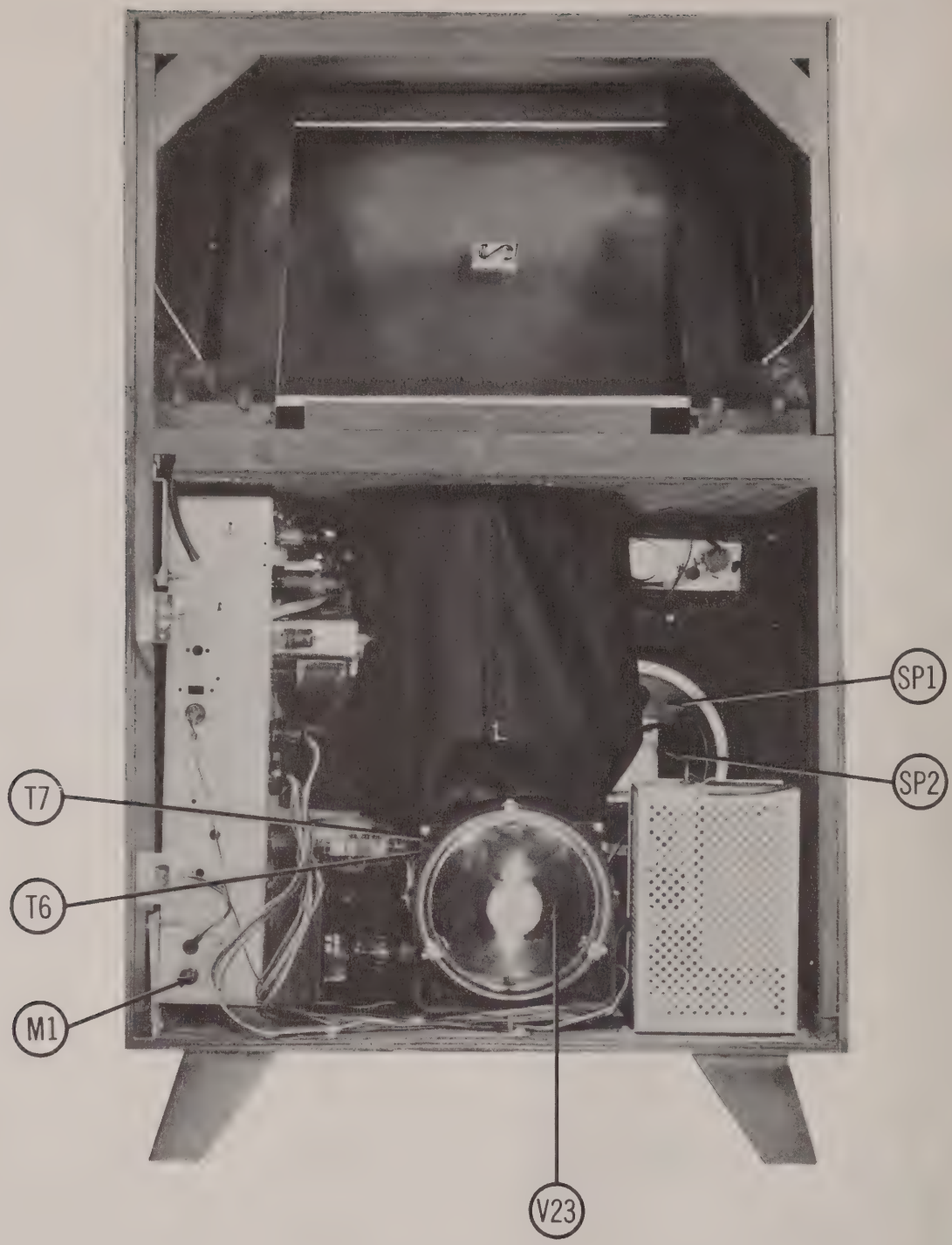
FIG.9

RESISTANCE MEASUREMENTS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.7Meg	0Ω	.1Ω	0Ω	■2.5KΩ	■2.5KΩ	0Ω		
V 2	6J6	■5KΩ	■15KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	1.7Meg	47Ω	0Ω	.1Ω	■360Ω	■360Ω	0Ω		
V 4	6CB6	1.7Meg	47Ω	0Ω	.1Ω	■240Ω	■240Ω	0Ω		
V 5	6CB6	8.2KΩ	68Ω	0Ω	.1Ω	■120Ω	■120Ω	0Ω		
V 6	6AL5	600Ω	30KΩ	.1Ω	0Ω	35KΩ	0Ω	680KΩ		
V 7	6AG7	0Ω	0Ω	INF	35KΩ	150Ω	■2.2KΩ	.1Ω	†6.7KΩ-	
V 8	6SN7GT	0Ω	■70KΩ	270KΩ	1Meg	■50KΩ	4.7KΩ	.1Ω	0Ω	
V 9	6BC5	■470KΩ	■1KΩ	■.1Ω	■0Ω	†56KΩ	†40KΩ	■1KΩ		
V 10	6S8	INF	■0Ω	■43KΩ	■525KΩ	■525KΩ	†330KΩ	■0Ω	■.1Ω	TOP CAP ■470KΩ
V 11	6V6GT	INF	■0Ω	†930Ω	†570Ω	280KΩ	INF	■.1Ω	16KΩ	
V 12	6SN7GT	2.2Meg	†2.2KΩ	1.7KΩ	1.8Meg	†2.1Meg	0Ω	.1Ω	0Ω	
V 13	6SN7GT	24KΩ	†150KΩ	0Ω	1.5Meg	■180KΩ	0Ω	0Ω	.1Ω	
V 14	6AL5	4.8Meg	4.8MEG	.1Ω	0Ω	33KΩ	0Ω	33KΩ		
V 15	6SN7GT	5.1 Meg	■18KΩ	680Ω	80KΩ	■180KΩ	680Ω	.1Ω	0Ω	
V 16	6GB6G	INF	0Ω	100Ω	INF	270KΩ	270KΩ	.1Ω	†24KΩ	TOP CAP #135Ω
V 17	6W4GT	INF	INF	†10KΩ	INF	†200Ω	#35Ω	.1Ω	0Ω	
V 18	5U4G	INF	20KΩ	INF	120Ω	INF	120Ω	INF	20KΩ	
V 19	6L6G	0Ω	0Ω	†1.3KΩ	†34KΩ	47KΩ	†180Ω	.1Ω	220Ω	
V 20	6V6GT	0Ω	0Ω	3Ω	3Ω	300KΩ	INF	.1Ω	820Ω	
V 21	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP INF
V 22	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP 300KΩ
V 23	3NP4	270KΩ	.1Ω	0Ω	0Ω	†215KΩ				

ALL CONTROLS SET FOR NORMAL OPERATION
† MEASURED FROM PIN 8 OF V18
# MEASURED FROM PIN 3 OF F V17
■ MEASURED FROM 145VDC LINE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

The following adjustments should be made by looking at the tube face, since misadjustment of the optical system may cause erroneous indications on the viewing screen.

Turn the set on and tune in a TV station, preferably a test pattern.

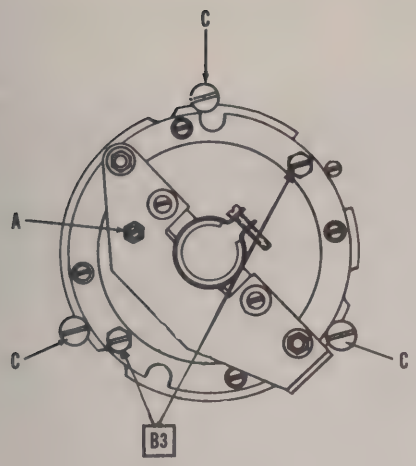
Turn the horizontal hold control to the mid-position of its range.

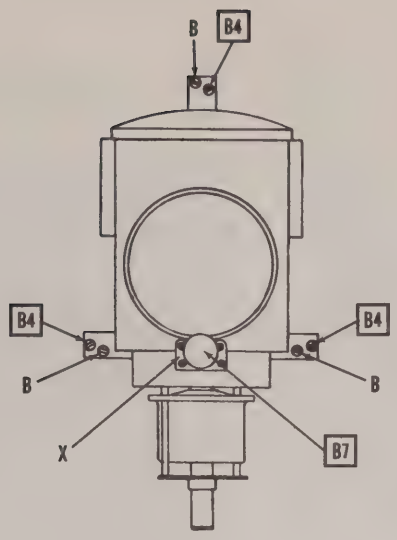
Adjust the horizontal frequency slug, (B1), to the center of the range over which the picture synchronizes horizontally .

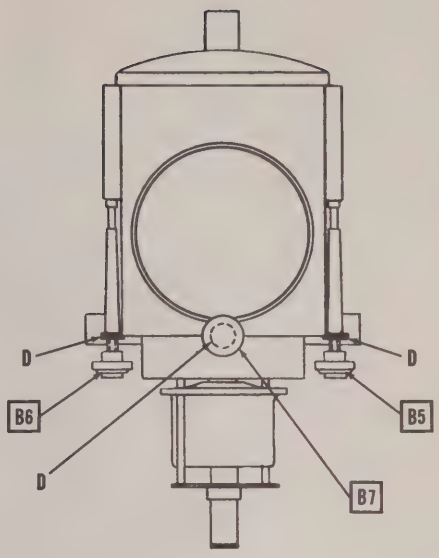
Adjust the horizontal drive control clockwise as for as possible without crowding or bright vertical lines appearing in the picture.

Adjust the horizontal linearity slug, (B2) until the picture is symmetrical from left to right.

Since width and horizontal linearity are effected by the horizontal drive control, it may be necessary to adjust the drive control and and horizontal linearity slug alternately to obtain proper width with best linearity.







OPTICAL ADJUSTMENTS

It is important that all electrical adjustments, especially focus, be correct before attempting any optical adjustments, since no amount of optical adjustments can compensate for incorrect electric adjustments.

Make sure the red shipping clamp "X" under the vertical focus knob, (B7), is removed before making the optical adjustments.

Do not apply pressure to the focus assembly; to do so may break the focus coil support bracket.

Loosen the focus coil lock nut and screw "A" and adjust the centering screws, (B3), until the corners of the picture just touch the edge of the picture tube face. Tighten the lock screw and lock nut "A".

If the picture is not centered on the viewing screen, loosen the mounting feet lock bolts "B" and adjust the optical unit tilt adjustment screws, (B4), until the projected picture is centered on the viewing screen.

If the projected picture is tilted with respect to the viewing screen edges, loosen the tube mount locknuts "C" and rotate the entire assembly until the picture is aligned with the edges of the viewing screen.

Loosen the focus adjustment locknuts "D".

Adjust the horizontal focus adjustment, (B5), until a horizontal line on the right side of the view screen, (viewed from front), is focused through the center of the picture.

Adjust the focus adjustment, (B6), until the same horizontal line is focused from the left side of the view screen through the center of the picture. Repeat the adjustments of B5 and B6 until the horizontal line is focused all the way across the picture.

Adjust the vertical focus adjustment, (B7), until all the lines in the picture from top to bottom are focused.

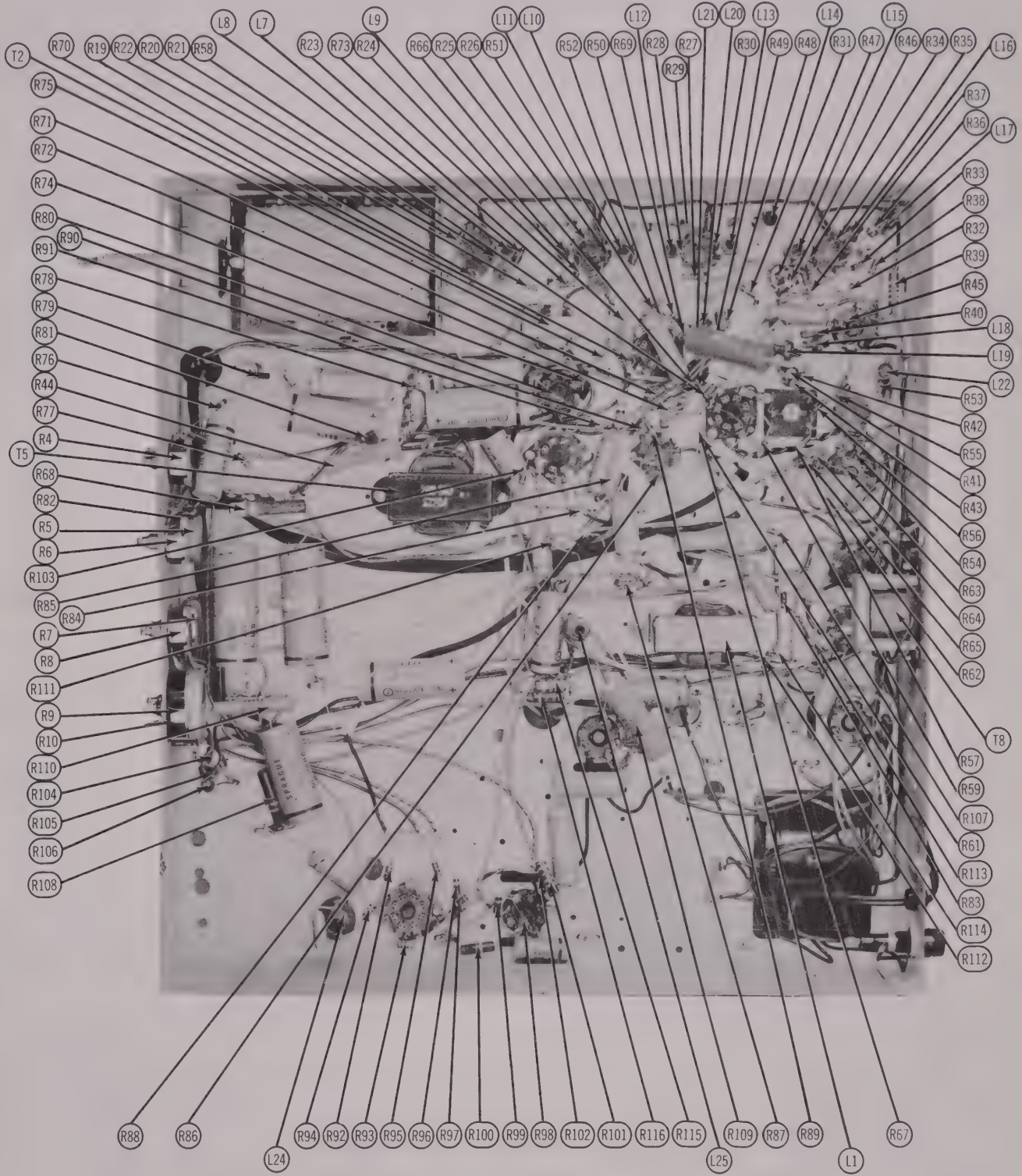
Hand tighten locknuts "D".

All other adjustments on the projections unit should not be adjusted in the field.

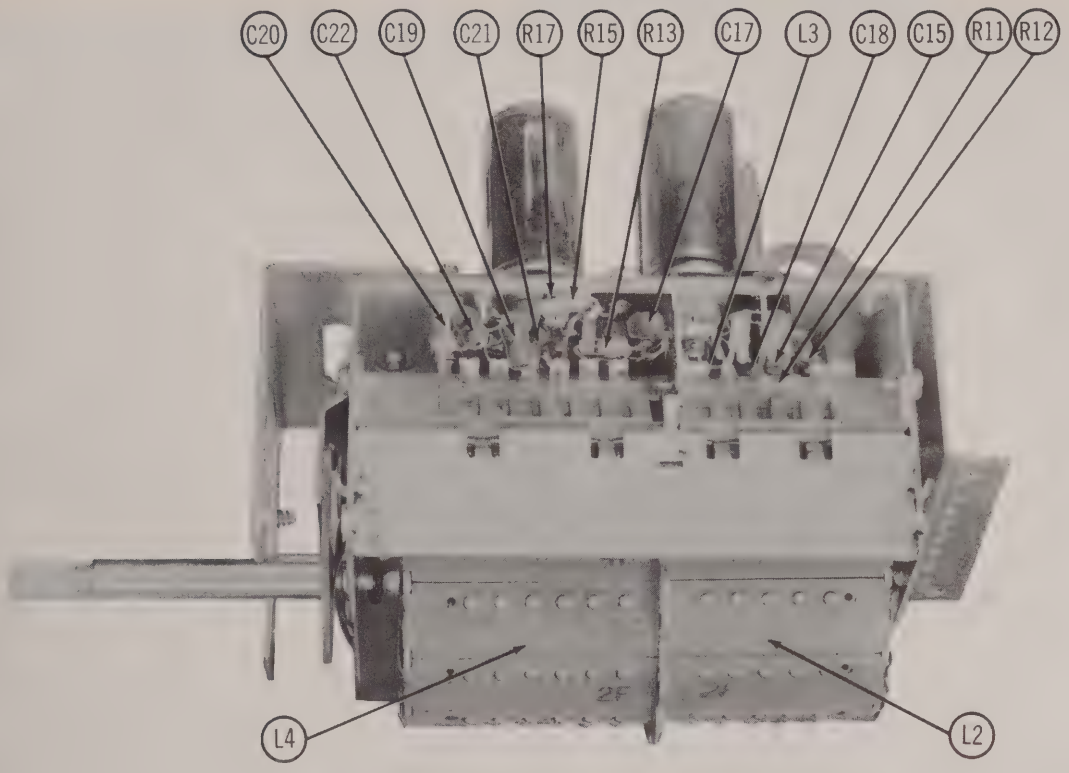
DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type controls knobs.
2. Remove nine wood screws from top and bottom portions of rear cover. Remove rear covers.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Remove interlock arrangement.
6. Disconnect yoke plug.
7. Disconnect lead from High Voltage Unit.
8. Disconnect speaker.
9. Remove two wood screws securing receiver chassis to cabinet. Remove chassis.
10. Remove four wing nuts from High Voltage Unit. Remove unit.
11. Remove four bolts from projection unit. Remove unit.

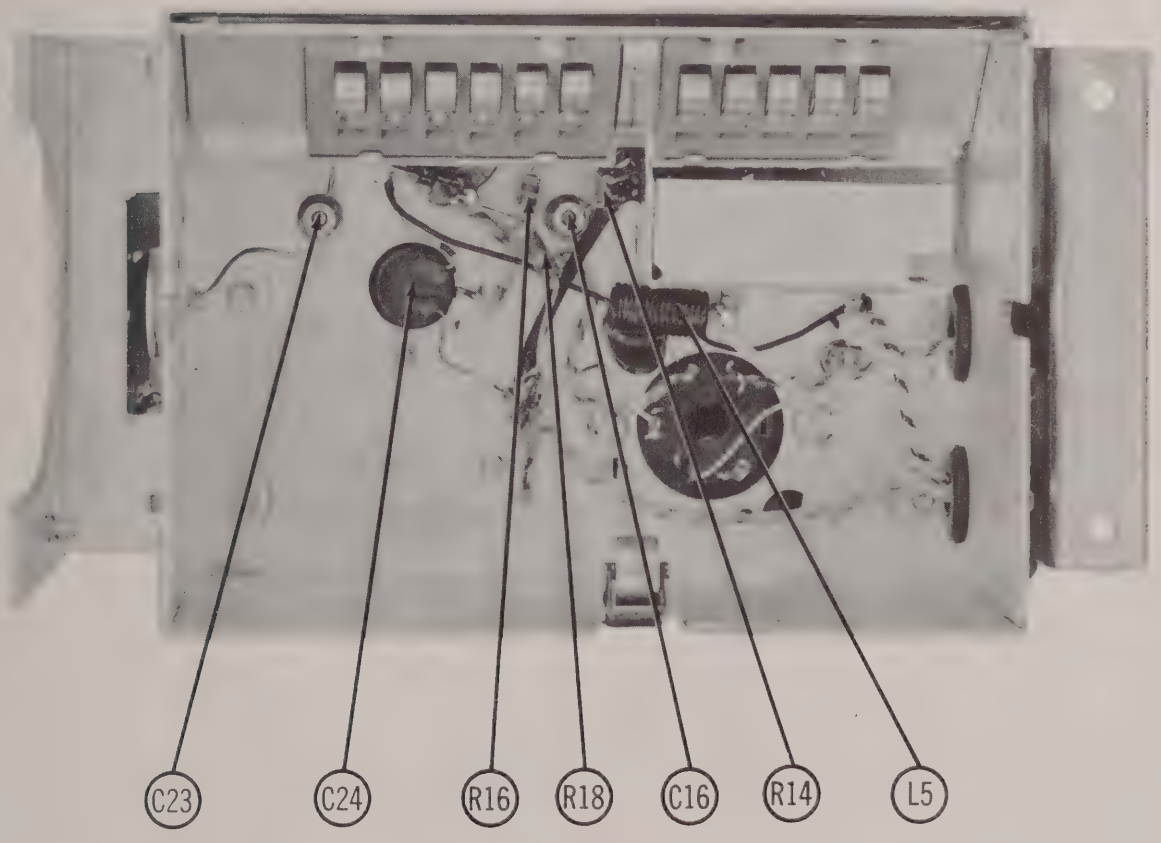
NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE PROJECTION UNIT AS OUTLINED ABOVE.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	7CM	
B	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BP	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp	6CB6	6CB6	7CM	
V5	3rd. Video IF. Amp	6CB6	6CB6	7CM	
V6	Video Detector AGC Rectifier	6AL5	6AL5	6BT	
V7	Video Amplifier	6AG7	6AG7	8Y	
V8	DC Restorer-Sync. Seperator-Sync. Phase Inverter	6SN7GT	6SN7GT	8BD	
V9	Sound IF Amp.	6BC8	6BC8	7BD	
V10	Ratio Detector-AF Amplifier	6S8	6S8	8CB	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	Vert. Oscillator-Vert. Amplifier	6SN7GT	6SN7GT	8BD	
V13	Vert. Sweep Failure Protector-Horiz. Sweep Failure Protector	6SN7GT	6SN7GT	8BD	
V14	Horiz. Phase Det.	6AL5	6AL5	6BT	
V15	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	6BG6G	6BG6G	5BT	
V17	Damper	6W6GT	6W6GT	6CG	
V18	LV Rectifier	5U4G	5U4G	5T	
V19	HV Oscillator	6L6G	6L6G	7AC	
V20	HV Regulator	6V6GT	6V6GT	7AC	
V21	HV Rectifier	1B3GT	1B3GT	3C	
V22	HV Rectifier	1B3GT	1B3GT	3C	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: THOMAS PART No.	RTMA BASE TYPE	NOTES
V23	3NP4			5BV	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	40	500	3-137	A-H 1-61		UP4050			■ Filter
C2	80	450	3-132	A-H 1-55		UP8045		TVL-1850	▲ Filter
C3	40	450	3-134	PRS450/40		BR4045A		TVA-1712	Filter
C4	100	25	3-28	PRS25/100		BRH251A		TVA-1207	Horiz. Cent. Cont. Bypass
C5	25	25	3-133	PRS25/25		BR252A		TVA-1205	Bias Filter
C6	25	25	3-133	PRS25/25		BR252A		TVA-1205	Bias Filter
C7	100	25	3-28	PRS25/100		BRH251A		TVA-1207	Vert. Amp. Cathode
C8	20	450	3-135	PRS450/20		BR2045A		TVA-1709	Vert. Amp. Decoupling
C9	10	25	3-103	PRS25/10		BR102A		TVA-1204	Horiz. Output Cathode
C10	20	450	3-135	PRS450/20		BR2045A		TVA-1709	Decoupling
C11	20	450	3-135	PRS450/20		BR2045A		TVA-1709	Video Amp. Dec.
C12	40	450	3-134	PRS450/40		BR4045A		TVA-1712	Audio Output Dec.
C13	50	250	3-110	PRS250/40		BR5025		TVA-2520	Audio Output Cathode
C14	10	25	3-103	PRS25/10		BR102A		TVA-1204	Stabilizing Cap
C15	3-9				829-10				Variable Trimmer
C16	5-3				829-3				Variable Trimmer
C17	120			SII20	D6-121		GP2K-221	5GA-T12	RF Amp. Decoupling
C18	1000			SII000	D6-102		GP2L-102	5HK-D1	RF Amp. Fil.
C19	100			SII00	D6-101		GP1K-101	5GA-T1	RF Coupling
C20	1.5-3				829-3				Variable Trimmer
C21	20				TCN-20		N750K-200		Osc. Grid Cap.
C22	10			SII0NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C23	5-3				829-3				Variable Trimmer
C24A	1000								
B	1000			BPD-2x001	DD-2-102		812-001	5HK-2D1	Conv. Fil.
C									RF Bypass
C25	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AGC Filter
C26	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. Video IF Dec.
C27	1000		3-7	SII000	DC-102	1W5D1	GP2L-102	5HK-D1	IF Coupling
C28	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AGC Filter
C29	35	200	3-84	D8-503	PTE4S5			2TM-S5	AGC Filter
C30	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. Video IF Dec.
C31	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	IF Coupling
C32	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	3rd. Video IF Dec.
C33	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	3rd. Video IF Cathode
C34	1000		3-7	BPD-001	DD-102	1W5D1	801-001	5HK-D1	IF Coupling
C35	120	500	3-33	1468-00015	D6-121	5W5T15	GP2K-221	1F M-315	IF Coupling
C36	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	RF Bypass
C37	.1	200	3-82	P288-1	DF-104	PTE4P1		2TM-P1	Bias Filter
C38	.1	200	3-82	P288-1	DF-104	PTE4P1		2TM-P1	Video Amp. Screen
C39	680	500	3-136	1479-0007		2R5T7		MS-37	Contrast Cont. Shunt
C40	.1	600	3-86	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C41	47	500	3-2	1469-00005		5R5Q5		MS-45	Fixed Trimmer
C42	.1	200	3-82	P288-1	DF-104	PTE4P1		2TM-P1	Picture Tube Cathode
C43	2.2		3-81		TCZ-2.2		NP0K-2R2		Sound IF Coupling
C44	47	500	3-2	1469-00005		5R5Q5		MS45	Fixed Trimmer
C45	39	500	3-43	1468-00004	D6-390	5W5Q4	GP1K-390	1F M-44	Sound IF Grid Cap.
C46	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sound IF Screen
C47	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sound IF Cathode
C48	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	RF Bypass
C49	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D2	De-emphasis
C50	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Tone Comp.
C51	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Audio Coupling
C52	.05	600	3-85	P688-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C53	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Audio Output Plate
C54	22	500	3-35	1469-00025		5R5Q25		MS-425	Sync. Sep. Plate
C55	.1	200	3-82	P288-1	D2-104	PTE4P1		2TM-P1	Sync. Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C56A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		♦30-147	P688-005	♦PC-100	PTE6D5	GP2-333-502	♦101C1	Vert. Integrator Net.
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C57	4700	500	3-8	1464-005		1DR5D5		MS-25	Vert. Osc. Grid Cap.
C58	.1	600	3-86	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Discharge †
C59	.1	600	3-86	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C60	.05	200	3-84	P288-05	DF-503	PTE4S5		2TM-S5	Integrator Net.
C61	.05	200	3-84	P288-05	DF-503	PTE4S5		2TM-S5	Vert. Sweep Coupling †
C62	.1	200	3-82	P288-1	DF-104	PTE4P1		2TM-P1	Vert. Sweep Coupling
C63	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Bias Filter
C64	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	Bias Filter
C65	.05	200	3-84	P288-05	DF-503	PTE4S5		2TM-S5	Bias Filter
C66	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	Sync. Phase Inv. Plate
C67	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C68	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C69	.05	600	3-85	P688-05	DF-503	PTE6S5		6TM-S5	Horiz. Feedback
C70	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	AFC Filter
C71	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	AFC Filter
C72	5000		3-48	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AFC Filter
C73	.05	200	3-84	P288-05	DF-503	PTE4S5		2TM-S5	AFC Filter
C74	4700	500	3-8	1464-005		1DR5D5		MS-25	Fixed Trimmer
C75	330	500	3-5	1469-00035					Horiz. MV Feedback
C76	680	500	3-136	1479-0007		2R5T7		MS-37	Horiz. Discharge
C77	.01	600	3-117	P688-01	D6-103	PTE6S1	G12-333-103	6TM-S1	Horiz. Sweep Coupling
C78	.1	600	3-86	P688-1	D2-104	PTE6P1		6TM-P1	Horiz. Output Screen
C79	.1	600	3-86	P688-1	D2-104	PTE6P1		6TM-P1	Damper Filter
C80	.05	600	3-85	P688-05	D2-503	PTE6S5		6TM-S5	Damper Filter
C81	.05	200	3-84	P288-05	D2-503	PTE4S5		2TM-S5	Fixed Trimmer
C82	1000		3-7	SII000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sweep Coupling
C83	10000		3-83	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Horiz. Protector Plate
C84	.01	600	G8.381.23	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	HV. Osc. Screen
C85	.1	400	G8.381.09	P488-1	DF-104	PTE4P1		4TM-P1	HV. Osc. Cathode
C86	.01	400	G8.381..01	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	HV. Osc. Grid
C87	.1	400	G8.381.09	P488-1	D2-104	PTE4P1		4TM-P1	HV. Regulator Grid
C88	500	20000	P8.000.18 ¶	HV20A	TV1-502				HV. Doubler

♦ Items C56A, C56B, C56C, R73A, R73B, R73C, are combined in one unit.
† Some models use .25 MFD in this application (Part number 3-94).
‡ Some models use 01 MFD in this application (Part Number 3-83).
¶ When ordering this item, also order push-on nut part Number G5.399.97.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	1-46	QI3-133X	AT-78		Volume Control- Tap at 125KΩ
B	Shaft		Not Req.	Not Req.	FS-3		Attached to R1A per instructions
C	Switch		Not Req.	76-1	SWA		Attached to R1A per instructions
R2	1500Ω	4	1-78		RTV-199	SVP-998	Focus Control-Wire Wound
R3	750Ω	2	1-68	W-750	43-750	V-128	Contrast Control Wire Wound
R4A	1meg	½	1-48	QI1-137	AG-61-S	AN-69	Vertical Hold Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5	5000Ω	2	1-39	W-5000	43-5000	VK-135	Vertical Linearity Control Wire Wound
R6A	2.5Meg	½	1-44	QI1-239	AG-84-S	AN-83	Vertical Size Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7A	100KΩ	½	1-54	QI1-128	AG-49-S	AN-40	Horizontal Drive Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R7A per instructions
R8A	50KΩ	½	1-49	QI1-123	AG-44-S	AN-31	Horizontal Hold Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R8A per instructions
R9	100Ω	2	1-69	W-100	43-100	VK-121	Horizontal Centering Control Wire Wound
R10A	100KΩ	½	1-54	QI1-128	AG-49-S	AN-40	Brightness Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Ak-1	Attach to R10A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTANCE ± 10% UNLESS OTHER WISE STATED
R11	3900Ω	½		BTS-3900	Antenna Coil Shunt
R12	47KΩ	½		BTS-47K	AGC Network
R13	10KΩ	½		BTS-10K	RF Coil Shunt
R14	2200Ω	½		BTS-2200	RF Amplifier Decoupling
R15	4700Ω	½		BTS-4700	Mixer Grid
R16	220KΩ	½		BTS-220K	Mixer Grid
R17	10KΩ	½		BTS-10K	Oscillator Grid
R18	4700Ω	½		BTS-4700	Oscillator Plate
R19	8200Ω 5%	½	2-126	BTS-8200-5%	1st. Video IF Grid
R20	47Ω	½	2-21		1st. Video IF Cathode
R21	10KΩ 5%	½	2-136		2nd. Video IF Coil Shunt
R22	330Ω	½	2-40	BTS-330	AGC Network
R23	120Ω	½		BTS-120	Decoupling
R24	10KΩ 5%	½	2-136		2nd. Video IF Grid
R25	47Ω	½	2-21		2nd. Video IF Cathode
R26	8200Ω 5%	½	2-126		3rd. Video IF Coil Shunt
R27	120Ω	½		BTS-120	Decoupling
R28	8200Ω 5%	½	2-126		3rd. Video IF Grid
R29	68Ω	½	2-134		3rd. Video IF Cathode
R30	8200Ω 5%	½	2-126		4th. Video IF Coil Shunt
R31	120Ω	½	2-133	BTS-120	Decoupling
R32	1Meg	½	2-16	BTS-1Meg	AGC Network
R33	680KΩ	½	2-214	BTS-680K	AGC Rectifier Diode Load
R34	6800Ω	½	2-9	BTS-6800	Video Detector Load
R35	22KΩ	½	2-37	BTS-22K	Peaking Coil Shunt
R36	10KΩ 5%	½	2-136	BTS-10K-5%	Peaking Coil Shunt
R37	1KΩ	½	2-34	BTS-1000	Bias Network
R38	120Ω	½	2-133		Parasitic Suppressor
R39	470Ω	1	2-53	BTA-470	Contrast Control Shunt
R40	22KΩ	1	2-37	BTS-22K	Peaking Coil Shunt
R41	10KΩ	1	2-60	BTA-10K	Video Amplifier Plate
R42	10KΩ	1	2-60	BTA-10K	Video Amplifier Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R43	15kΩ	1	2-61	BTA-15K	Video Amplifier Plate
R44	2.5KΩ	10	2-152		Decoupling Wire Wound
R45	2.2KΩ	½	2-6	BTS-2200	Video Amplifier Screen
R46	39KΩ	1	2-66	BTA-39K	Voltage Divider
R47	39KΩ	1	2-86	BTA-39K	Voltage Divider
R48	6.8KΩ	½	2-9	BTS-6800	4.5MC Trap Coil Shunt
R49	2.7KΩ	½	2-47	BTS-2700	Picture Tube Grid
R50	270KΩ	½	2-29	BTS-270K	DC Restorer Load
R51	47KΩ	½	2-11	BTS-47K	Voltage Divider
R52	1Meg	½	2-16	BTS-1Meg	Sync. Separator Plate
R53	470KΩ	½	2-14	BTS-470K	Sound IF Grid
R54	1000Ω	½	2-34	BTS-1000	Sound IF Cathode
R55	27KΩ	½	2-20	BTS-27K	Voltage Divider
R56	100KΩ 20%	½		BTS-100K-5%	Sound IF Screen
R57	56KΩ	½	2-38	BTS-56K	Decoupling
R58	43KΩ 5%	½	2-75	BTS-43K-5%	Ratio Detector Diode Load
R59	27KΩ	½	2-20	BTS-27K	De-emphasis
R60	47KΩ	½	2-11	BTS-47K	Tone Compensation
R61	470KΩ	½	2-14	BTS-470K	AF Amplifier Grid
R62	330KΩ 5%	½		BTS-330K-5%	AF Amplifier Plate
R63	100KΩ 20%	½		BTS-100K	Output Grid
R64	300KΩ 5%	½	2-171		Voltage Divider
R65	180KΩ 5%	½	2-138	BTS-180K-5%	Voltage Divider
R66	4700Ω 20%	½		BTS-4700	Voltage Divider
R67	470KΩ	½	2-14	BTS-470K	Voltage Divider
R68	390Ω	2	2-222		Output Decoupling-Wire Wound
R69	1Meg	½	2-16	BTS-1Meg	Sync. Phase Inverter Grid
R70	4700Ω 20%	½		BTS-4700	Sync. Phase Inverter Cathode
R71	47KΩ	½	2-11	BTS 47K	Sync. Phase Inverter Plate
R72	4700Ω	½	2-48	BTS-4700	Sync. Phase Inverter Plate
R73A	2200Ω	½	♦	BTS-2200	Integrator Network
B	8200	½	♦	BTS-8200	Integrator Network
C	8200	½	♦	BTS-8200	Integrator Network
R74	330KΩ	½	2-141	BTS-330K	Vertical Oscillator Grid
R75	1Meg	½	2-16	BTS-1Meg	Vertical Oscillator Grid
R76	100KΩ	½	2-12	BTS-100K	Voltage Divider
R77	6.8MΩ	½	2-39	BTS-6.8Meg	Voltage Divider
R78	1Meg	½	2-16	BTS-1Meg	Vertical Oscillator Plate
R79	5600Ω	½	2-8	BTS-5600	Vertical Peaking
R80	2.2Meg	½	2-18	BTS-2.2Meg	Vertical Amplifier Grid
R81	1000Ω	½	2-34	BTS-1000	Vertical Amplifier Plate Decoupling
R82	560Ω	½	2-135	BTS-560	Vertical Amplifier Cathode
R83	1000Ω	½	2-34	BTS-1000	Isolation
R84	470KΩ	½	2-14	BTS-470K	Integrator
R85	470KΩ	½	2-14	BTS-470K	Integrator
R86	33KΩ	½	2-36	BTS-33K	Feedback Network
R87	4700Ω	½	2-48	BTS-4700	Feedback Network
R88	3300Ω	½	2-13	BTS-3300	Feedback Network
R89	100KΩ	½	2-12	BTS-100K	Horizontal Phase Detector Load
R90	100KΩ	½	2-12	BTS-100K	Horizontal Phase Detector Load
R91	4.7Meg	½	2-144	BTS-4.7Meg	Horizontal Phase Detector Load
R92	470KΩ	½	2-14	BTS-470K	Horizontal AFC Filter
R93	680KΩ	½	2-214	BTS-680K	Horizontal Multivibrator Cathode
R94	18KΩ	½	2-31	BTS-18K	Horizontal Multivibrator Plate
R95	56KΩ	½	2-38	BTS-56K	Horizontal Multivibrator Grid
R96	100KΩ	½	2-12	BTS-100K	Horizontal Multivibrator Plate
R97	820Ω	½	2-145	BTS-820	Horizontal Peaking
R98	270KΩ	½	2-29	BTS-270K	Horizontal Output Grid
R99	68Ω	½	2-134		Parasitic Suppressor
R100	100Ω	1	2-215	BTA-100	Horizontal Output Cathode
R101	47KΩ	1	2-65	BTA-47K	Horizontal Output Screen
R102	47KΩ	1	2-65	BTA-47K	Horizontal Output Screen
R103	12KΩ	½	2-137	BTS-12K	Horizontal Sweep Protector Grid
R104	33KΩ	½	2-36	BTS-33K	Horizontal Sweep Protector Plate
R105	47KΩ	2	2-118	BTB-47K	Horizontal Sweep Protector Plate
R106	47KΩ	2	2-118	BTB-47K	Horizontal Sweep Protector Plate
R107	100KΩ 20%	½		BTS-100K	Voltage Divider
R108	22KΩ	2	2-103	BTS-22K	Voltage Divider
R109	10KΩ	20	2-138	20D-10000	Damper Filter-Wire Wound
R110	150Ω	7.5	2-127	1.3/4A-150	Focus Coil Shunt-Wire Wound
R111	12KΩ	½	2-137	BTS-12K	Bias Network
R112	2700Ω	½	2-47	BTS-2700	Bias Network
R113	1800Ω	½	2-5	BTS-1800	Bias Network
R114	27KΩ	½	2-20	BTS-27K	Bias Network
R115	2200Ω	2	2-108	BTB-2200	Voltage Divider
R116	2200Ω	2	2-108	BTB-2200	Voltage Divider
R117	560Ω 20%	½	G8.305.22		Parasitic Suppressor
R118	47KΩ	½	G8.312.45	BTS-47K	HV Oscillator Grid
R119	220Ω	2	G8.346.17	BTB-220	HV Oscillator Cathode
R120	33KΩ	1	G8.317.43	BTA-33K	HV Oscillator Screen
R121	300KΩ 5%	½	G8.311.12		HV Regulator Grid
R122	820Ω 5%	1	G8.315.46	BTA-820-5%	HV Regulator Cathode
R123	3.3Ω	1	G8.324.03		HV Rectifier Filament-Wire Wound
R124	3.3Ω	1	G8.324.03		HV Rectifier Filament Wire Wound
R125	1.5 Meg 20%	1			HV Filter

♦ Items R73A, R73B, R73C, C56A, C56B, C56C, are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: NORELCO PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @1.8A	800VCT @.200A	5.0VAC @3.0A	6.3VAC @9.0A Sec. 4 6.3 VAC @1.1A	20B-515	P-8157	P-3067	TP-380

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA NORELCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	200Ω	1100Ω	20B-564	A-8111 ①	A-3000 ①	TB0-1 ①	Vert. Blocking Osc. Trans.
T3	1160Ω Tapped @ 2Ω	Sec. 1 3.5Ω Sec. 2 2.9Ω Sec. 3 0Ω Sec. 4 0Ω	P9.001.81				H.V. Osc. Trans.
T4	100Ω	9Ω Tapped @ .5Ω	20-38				Horiz. Output Trans.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA NORELCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T5	1000Ω	9.5Ω	20B-563	A-8112 ①	A-3036	TS0-5 ①	Vert. Output Trans.
T6	290Ω		P9.205.12M				Focus Coil
T7A	17Ω		P9.000.22				Horiz. Deflection Coils
B	66Ω						Vert. Deflection Coils

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA NORELCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T8	3.7KΩ	3.6Ω	360Ω	.5Ω	20-21	A-3825 ①	A-3018 ①	R0-302	

SPEAKER

ITEM No.	RATINGS FIELD RES.	V.C. IMP	REPLACEMENT DATA NORELCO PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	P.M.	3.6Ω	38-9	ST-115 Mod P8-V	8A21	
	CONE DIA.	V. C. DIA				
SP2	7½ in.	9/16 in.				

COILS (RF-IF)

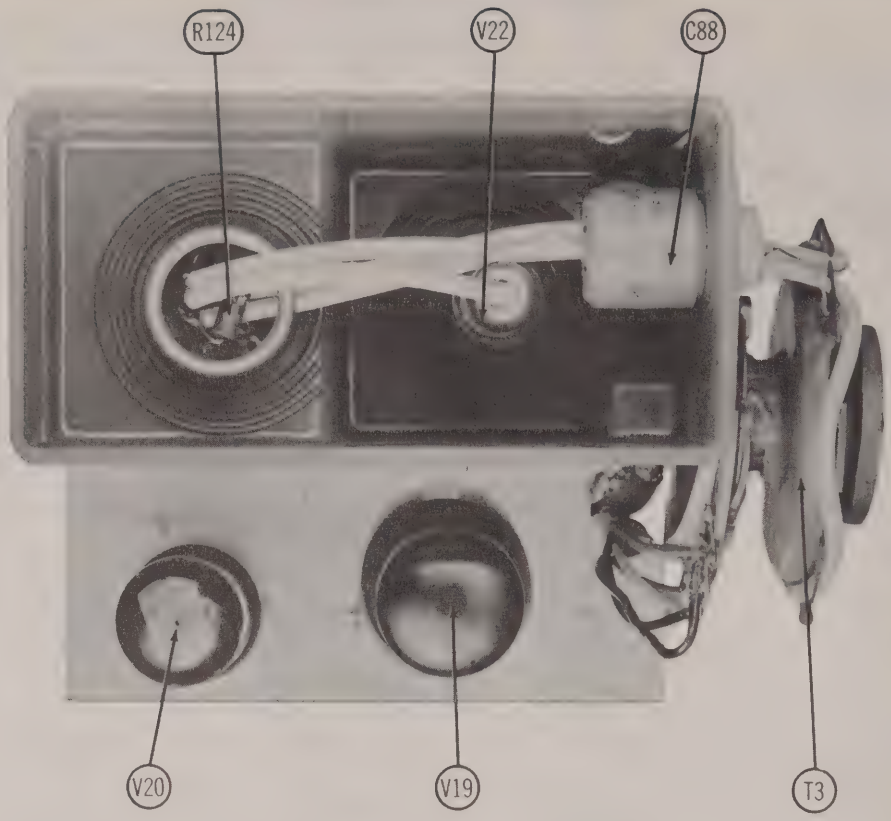
ITEM No.	USE	DC RES. PRI.	SEC.	REPLACEMENT DATA NORELCO PART No.	MERIT PART No.	IRC PART No.	NOTES
L2	Ant. Coils	0Ω	.1Ω				Channel 2
L3	Fil. Choke	0Ω					
L4	RF. Mixer Grid Osc.	0Ω					
L5	Fil. Choke	0Ω					
L6	Conv. Plate	.9Ω					
L7	RF Choke	.2Ω		21A-518-1			
L8	1st. Video IF Plate	.2Ω		21A-517-3	TV-102		
L9	2nd. Video IF Grid	.2Ω		21A-517-2	TV-102		
L10	RF Choke	.2Ω		21A-518-1			
L11	2nd. Video IF Plate	.2Ω		21A-517-3	TV-102		
L12	3rd. Video IF Grid	.2Ω		21A-517-2	TV-102		
L13	3rd. Video IF Plate	Ω2Ω		21A-517-3	TV-102		
L14	Video Det. Plate	1Ω		21A-517-4	TV-102		
L15	Video Det. Coil	.2Ω		21A-517-2			
L16	Peakimg Coil	7.3Ω		21A-260-1	TV-187		
L17	Peaking Coil	5Ω		21A-260-3	TV-182		
L18	Peaking Coil	5Ω		21A-260-3	TV-182		
L19	Peaking Coil	7.3Ω		21A-260-1	TV-187		
L20	4.5MC Trap	1.8Ω		21A-517-5	TV-151		
L21	Peaking Coil	4.4Ω		21A-260-6	TV-181		
L22	Sound IF	1.8Ω		21A-517-5	TV-150		
L23	Ratio Det. Trans.	3.6Ω	.7Ω	20-27	TV-111		Tap At .4Ω
L24	Horiz. Osc.	105Ω		21-28	TV-163		
L25	Horiz. Lin.	35Ω		21-6			

FUSES

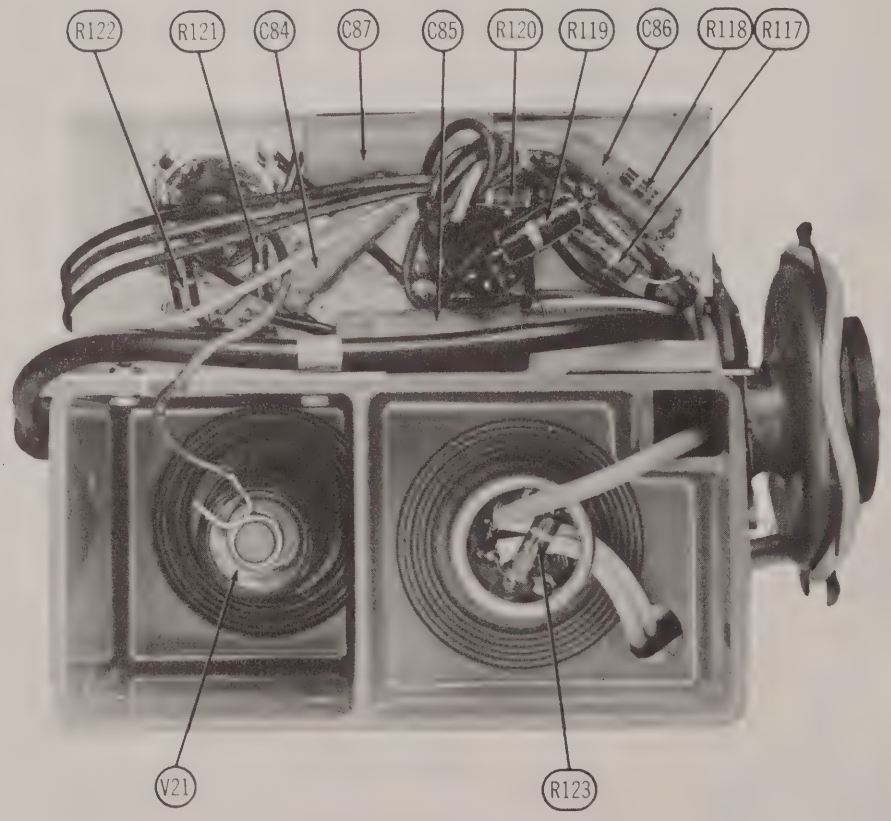
ITEM No.	TYPE	RATING	REPLACEMENT DATA NORELCO PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	REMARKS
M1	3AG Slo-Blo	2½ A.	11-10	11-4	31302.5 318.250	342001	
M2	3AG	1/4A.	11-9				

MISCELLANEOUS

ITEM No.	PART NAME	NORELCO PART No.	NOTES
M3	RF Tuner	39-9	
M4	Crystal		1N34

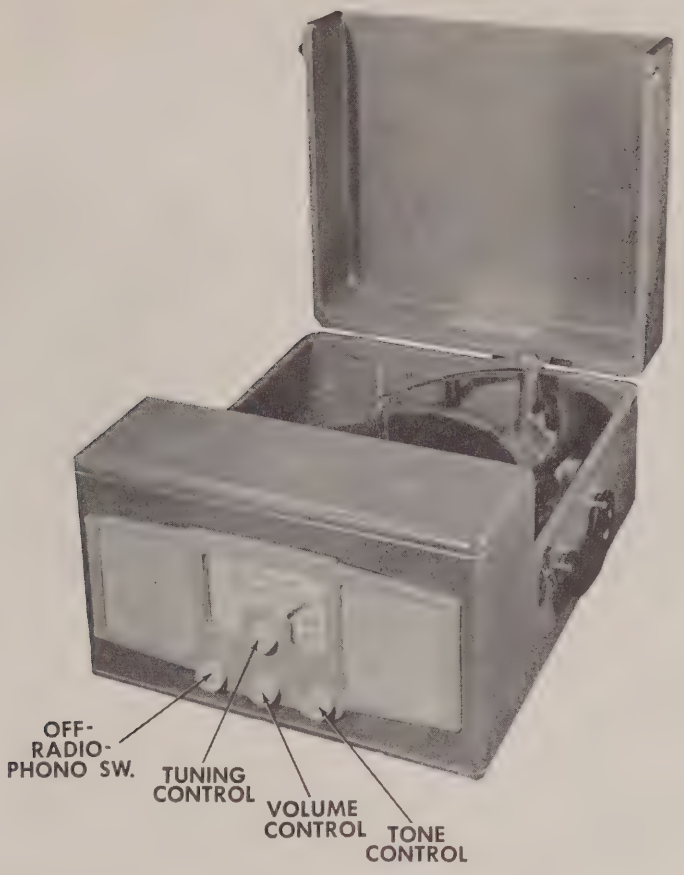


HIGH VOLTAGE SUPPLY - TOP VIEW



HIGH VOLTAGE SUPPLY - BOTTOM VIEW

SENTINEL
MODELS 1U342-K, 342-K



SENTINEL
MODELS 1U342-K, 342-K

TRADE NAME	Sentinel Models 1U342-K, 342K
MANUFACTURER	Sentinel Radio Corp., 2100W. Dempster, Evanston, Ill.
TYPE SET	AC Operated Radio-Phono Combination Superheterodyne Receiver With Loop Antenna
TUBES (FIVE)	Types 12BE6. Conv., 12BA6 If Amp., 12AT6 Det.-AVC Amp., 50C5 Power Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC RATING .21 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an ouput reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.02MFD	High side to stator on rear section of tuning gang. Low side to B-	455KC (400Ω Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	"	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SENTINEL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3	Detector-AVC-AF Amplifier	12AT6	12AT6	7BT	
V4	Power Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	†25E1	AFH2-16		UP5515		TVL-2435	♦ Filter
B	50	150							▲Filter
C2	.05	200	23E216	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C3	200	500	23E41	1468-0002	D6-201	5W5T2	GP2K-201	1FM-325	Volume Control Bypass
C4	.005	200	23E208	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C5	.005	400	23E408	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C6A	250		♦23E2041-2	SI250	♦PC-81	5W5T25	GP2K-251	1FM-325	AF Amp. Plate
B	.01			P688-01		PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C7	.02	400	23E413	P488-02	DF-203	PTE4S2		4TM-S2	Power Output Plate
C8	.05	400	23E416	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C9	.05	400	23E416	P488-05	DF-503	PTE4S5		4TM-S5	Line Isolation *
C10	.05	400	23E416	P488-05	DF-503	PTE4S5		4TM-S5	Phono Isolation

* Not used in all models
† Model 1U342-K uses part no. 25E16
♦ Items C6A, C6B, R6A, R6B are combined in one unit

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	28E46	Q13-137	AG-63-Z	BKS-70	Volume Control
	Shaft		Not Reg.	Not Reg.	KSS-3	Not Reg.	Attach to R1A per instructions
R2A	500K	½	28E41	Q13-133	AG-60-Z	BKS-60	Tone Control
B	Shaft		Not Reg.	Not Reg.	KSS-3	Not Reg.	Attach to R2A per instructions

RESISTORS

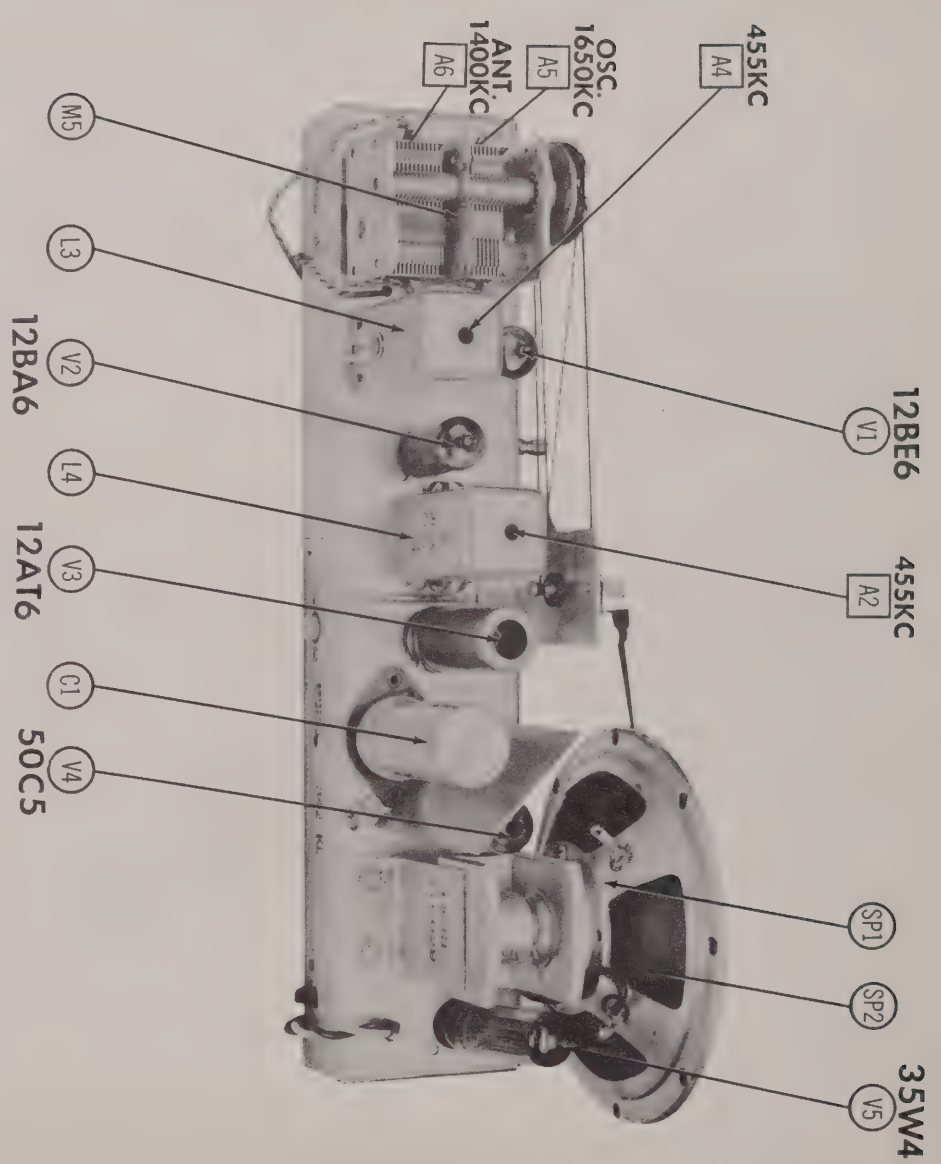
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SENTINEL PART No.	IRC PART No.	IDENTIFICATION CODES
R3	22KΩ	1/3	27E223-2	BTS-22K	Oscillator Grid
R4	3.3 Meg	1/3	27E335-2	BTS-3.3Meg	AVC Network
R5	3.3 Meg	1/3	27E335-2	BTS-3.3Meg	AF Amplifier Grid
R6A	250KΩ	1/3	♦23E2041-2	BTS-270K	AF Amplifier Plate Load
B	500KΩ	1/3		BTS-470K	Output Grid
R7	150Ω	1/3	27E151-2	BTS-150	Output Cathode
R8	2200Ω	1	27E222-3	BTA-2200	Filter
R9	47Ω	1/2	27E470-2	BW-½-47	Surge Limiter
R10	150Ω	1/3	27E151-2	BTS-150	Pilot Light Shunt

♦ Items C6A, C6B, R6A, and R6B are combined in one unit.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SENTINEL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	3.3KΩ	3.5 Ω	230Ω	1Ω	22E8-2	A-3332①	A-3025①	RO-2①	① Drill one new mounting hole

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	SENTINEL PART No.	JENSEN PART No.	QUAM PART No.	
SP1	P.M.	3.5Ω	1E33	ST-105 Mod. P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 3/4 in.	9/16 in.				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	SENTINEL PART No.	MERIT PART No.	
L1	Loop Ant.	2.7Ω	.2Ω	64E21		
L2	Osc. Coil	1Ω	9Ω	20E397		170 microhenries@ 14MMF
L3	Input IF	19Ω	19Ω	20E402		
L4	Output IF	19Ω	19Ω	20E402		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	SENTINEL PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		CAC-AG-J	Q-AG	W26B	A66U	33	O-2 (or) S-2	

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		JENSEN PART No.	REMARKS
	SENTINEL PART No.	WALCO PART No.		
M2		W-2AGA or W-2AGS	A-802 or A-812	

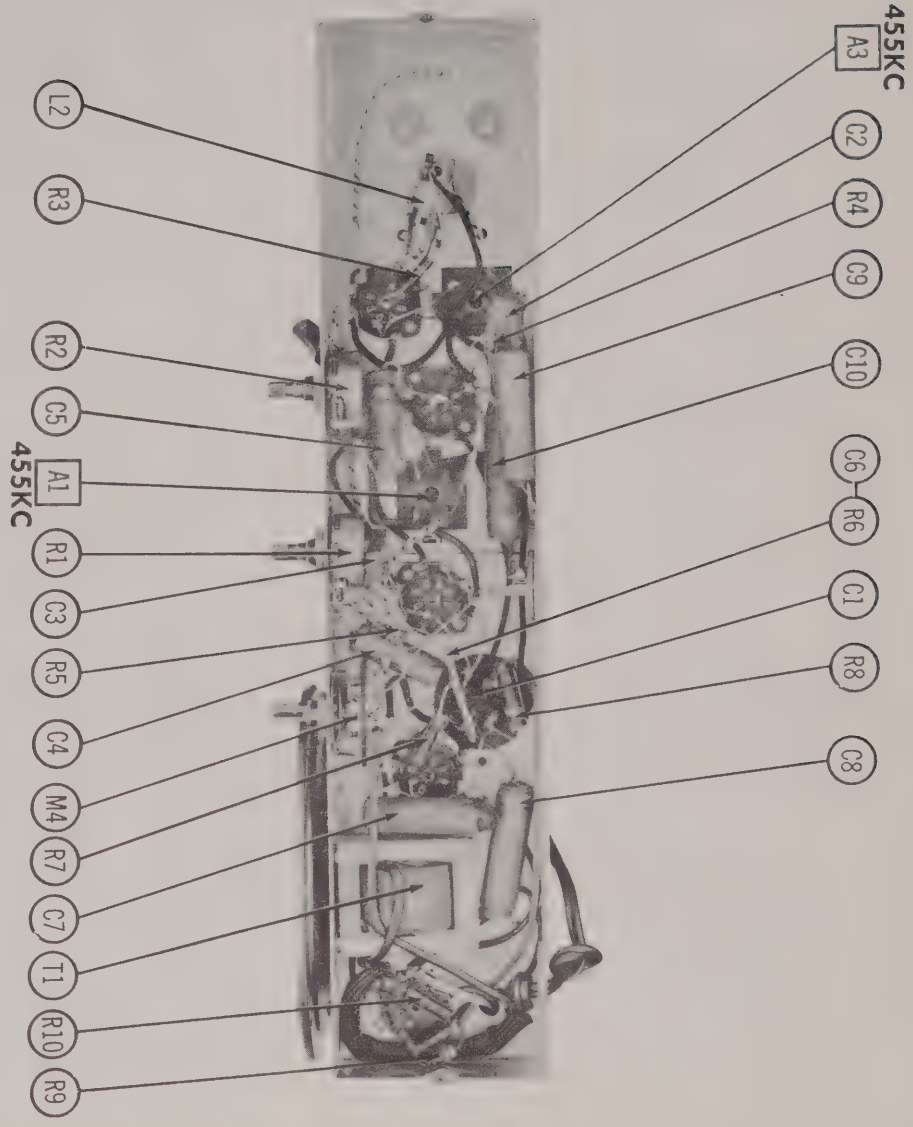
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					SENTINEL PART No.		
M3	Bayonet	6-8	.150	Brown	40E1		Type number 47

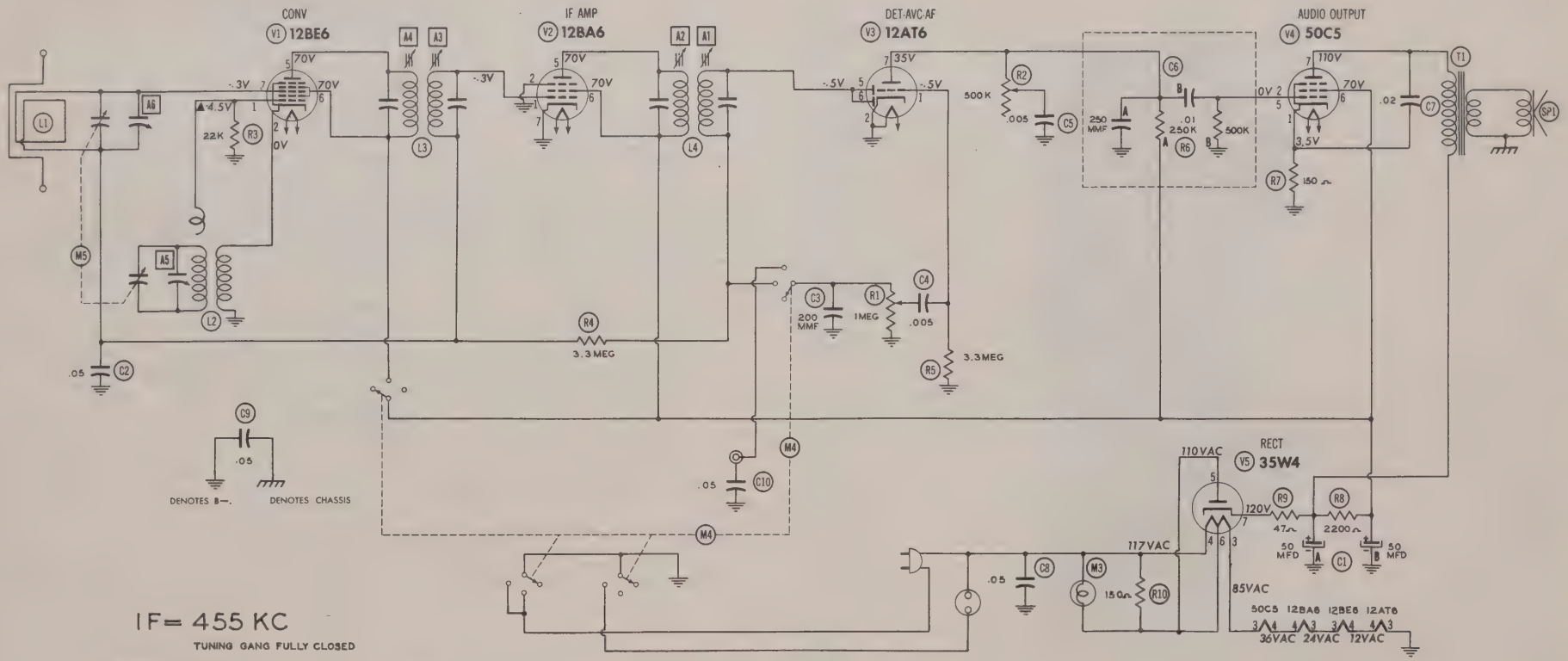
MISCELLANEOUS

ITEM No.	PART NAME	SENTINEL PART No.	NOTES
M4	Switch	29E23	Radio-Phono-On/Off
M5	2 Gang Var. Cap.	24E47	(27-469 MMF, 23-150MMF)
	Dial Scale	36E64	
	Dial Pointer	35E25-4	
	Knob	37E56	
	Knob	37E56-2	With Dot

CHASSIS—BOTTOM VIEW

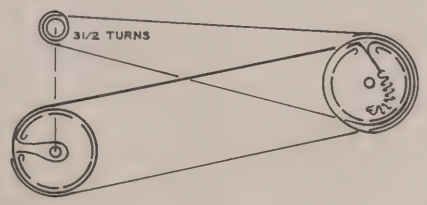


SENTINEL MODEL 1U342-K



IF= 455 KC

TUNING GANG FULLY CLOSED



DIAL CORD DRIVE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12 BE6	22KΩ	1Ω	24Ω	12Ω	†2.2KΩ	†2.2KΩ	4.3Meg
V 2	12BA6	4.3Meg	0Ω	24Ω	36Ω	†2.2KΩ	†2.2KΩ	0Ω
V 3	12AT6	3.3 Meg	0Ω	0Ω	12Ω	1Meg	1Meg	†250KΩ
V 4	50C5	150Ω	500KΩ	86Ω	36Ω	500KΩ	†2.2KΩ	†275Ω
V 5	35W4	†47Ω	INF	86Ω	121Ω	110Ω	110Ω	500KΩ

▲ TAKEN WITH VACUUM TUBE VOLTMETER
ALL MEASUREMENTS TAKEN IN RADIO POSITION
† MEASURED FROM PIN 7 OF V5

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PHOTOFACT* Folder

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RTMA MEMBER RADIO-TELEVISION MANUFACTURERS ASSOCIATION

SETCHELL-CARLSON
MODEL 151

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MODEL 151-A17

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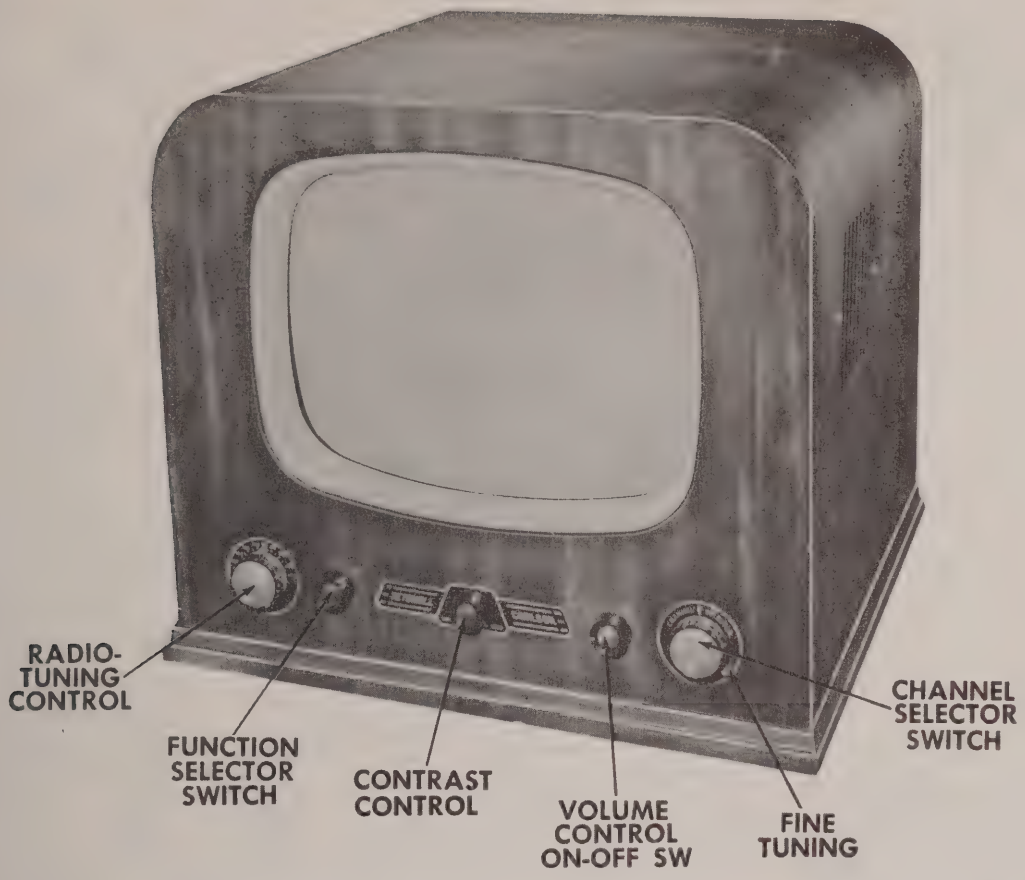
DATE 1-52 SET 155 FOLDER 15



SETCHELL-CARLSON
MODEL 151

SETCHELL-CARLSON MODEL 151-A17

TRADE NAME	Setchell-Carlson Models 151-A17, 151-A17-LR, 151-B17, 151-B17-LR, 151-B20, 151-B20-LR, 151-C20, 151-C20-LR
MANUFACTURER	Setchell-Carlson, Inc., New Brighton, Minn.
TYPE SET	TV-AM Combination Receiver
TUBES	Twenty-Six
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATINGS 1.7 Amp. @ 117 Volts AC
TUNING RANGE—	TV Channels 2 thru 13 AM 540-1620KC

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 11
Horizontal Sweep Circuit Adjustments 11
Parts List and Description 12, 13, 14
Photographs
Chassis - Bottom View 15
Chassis - Top View 4
Sub Chassis
A1 5
B1 7
C1 8
Photographs (cont.)
Sub Chassis
D2 8
E2 9
F4 9
G2 10
H2 16
Resistance Measurements 10
Schematic 2
Tube Placement Chart 3

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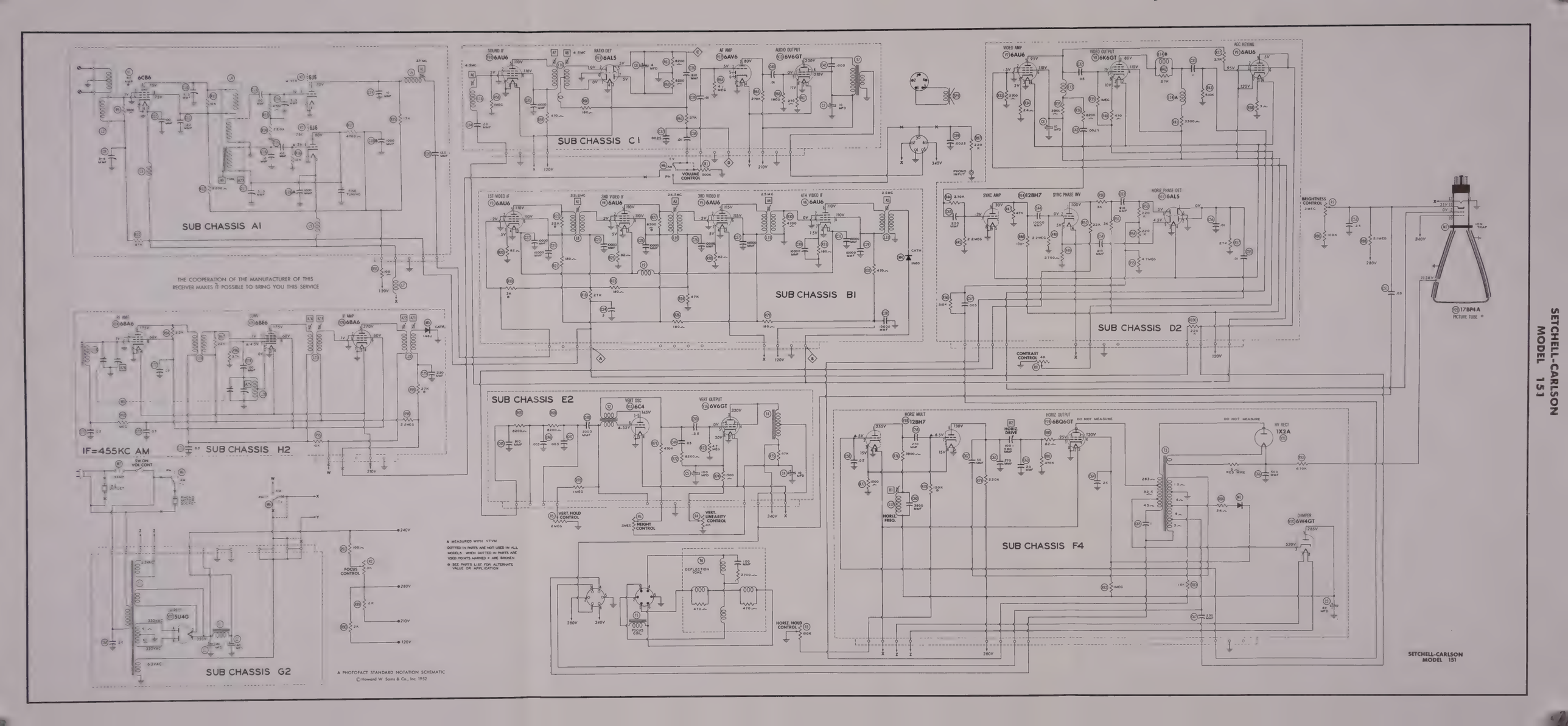
SUB CHASSIS A1
SUB CHASSIS C1
SUB CHASSIS B1
SUB CHASSIS D2
SUB CHASSIS E2
SUB CHASSIS F4
SUB CHASSIS G2
SUB CHASSIS H2
IF=455KC AM
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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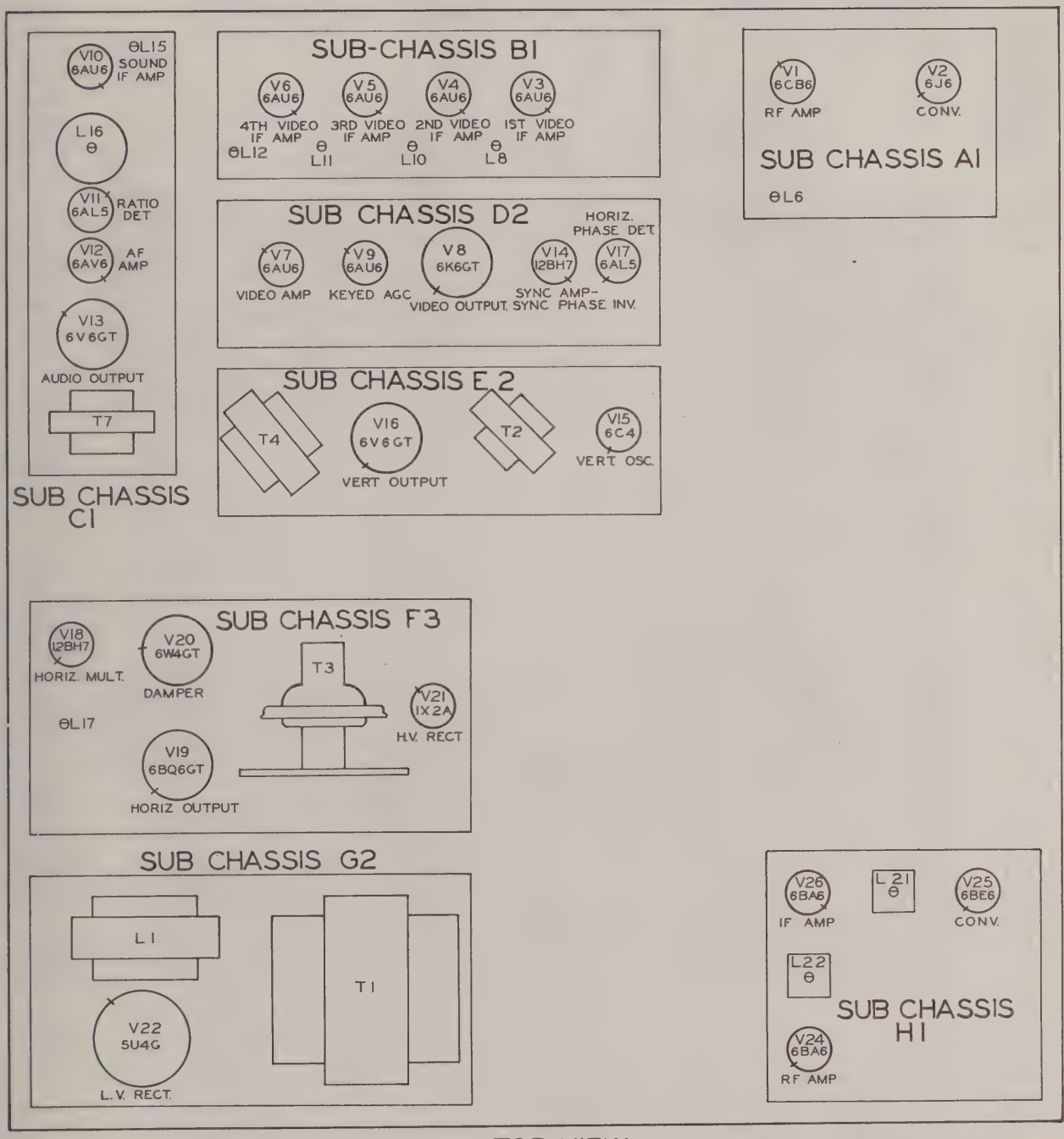
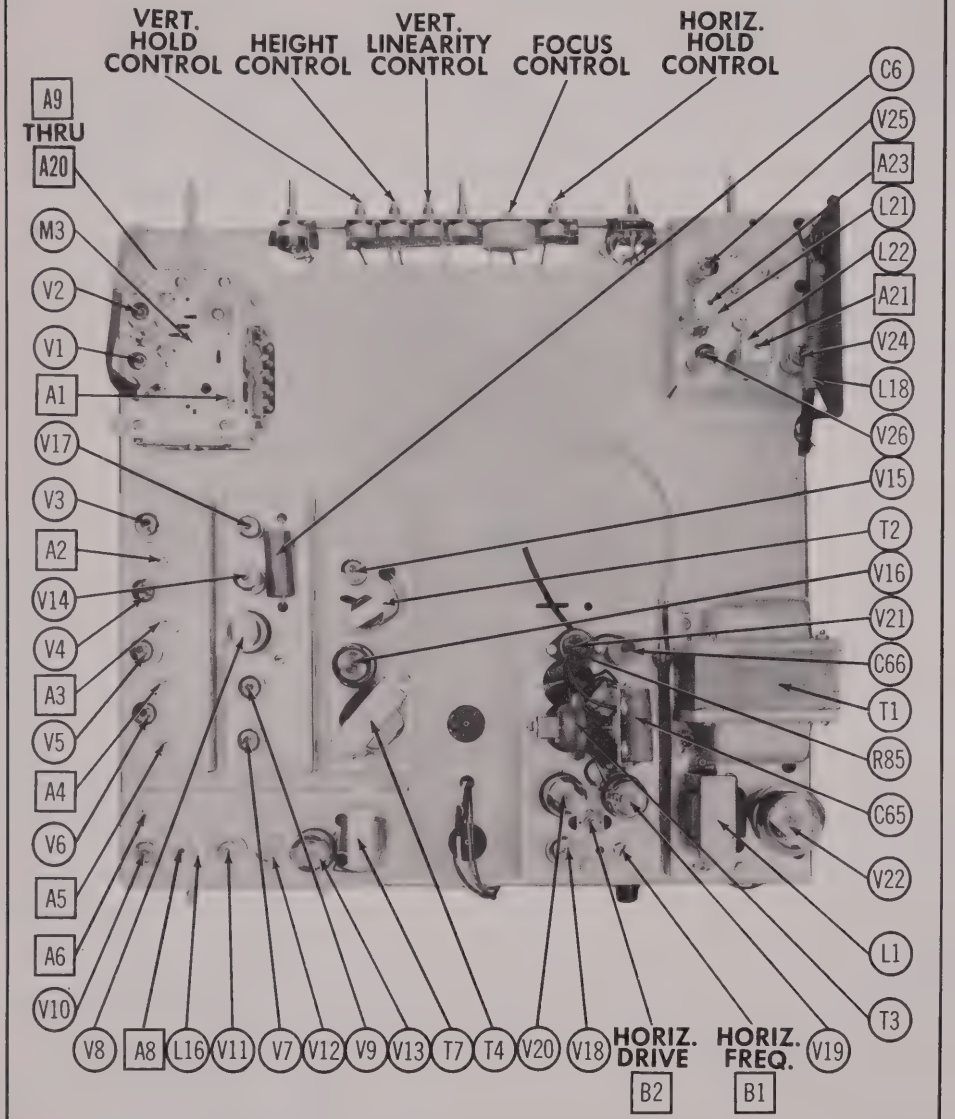
SETCHELL-CARLSON MODEL 151
SETCHELL-CARLSON MODEL 151

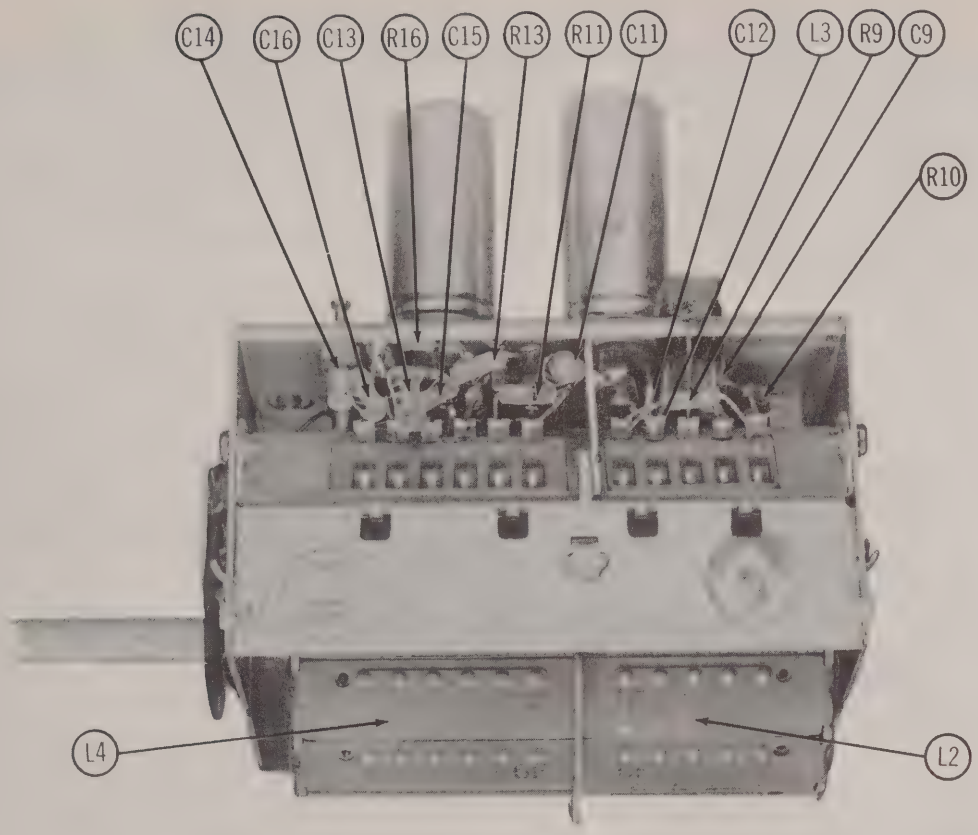


TOP VIEW

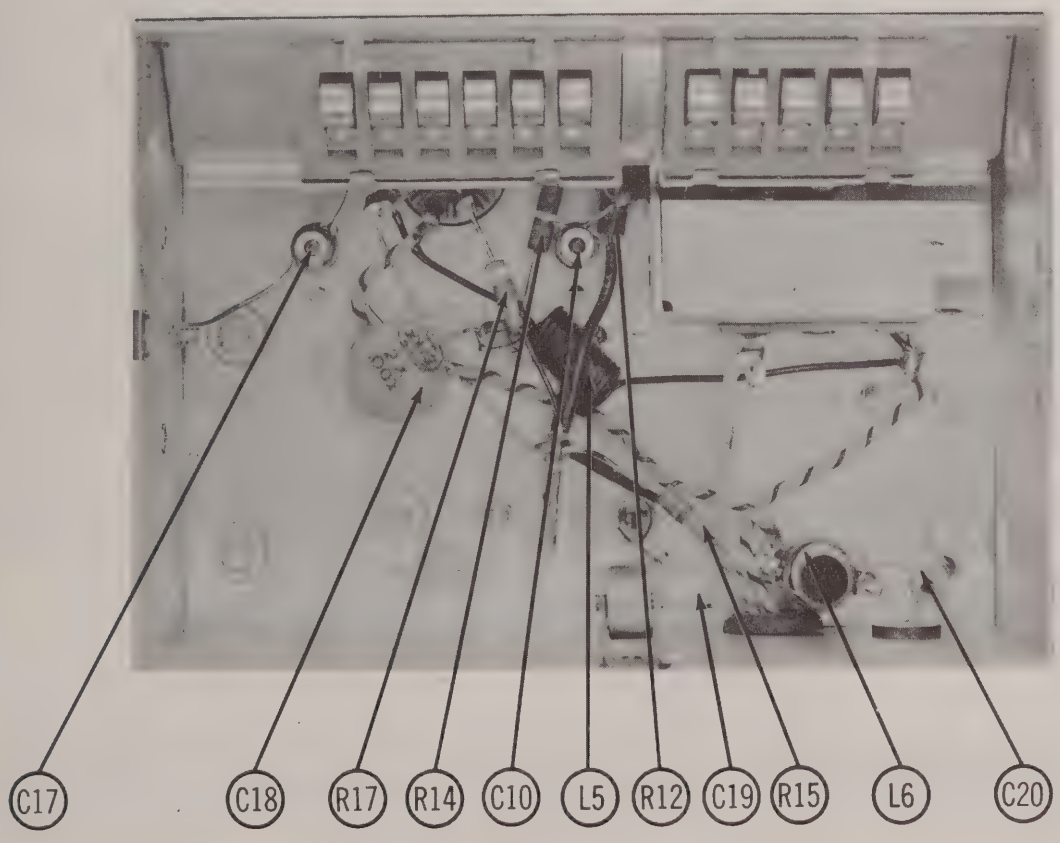
TUBE PLACEMENT CHART



CHASSIS TOP VIEW



SUB-CHASSIS AI



SUB-CHASSIS AI

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage. Turn the function selector switch to TV, (clockwise).

VIDEO IF ALIGNMENT

Remove the converter tube, (V2) and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to point Ⓐ. Connect the positive lead to chassis

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	23MC (unmod)	Any	DC probe to point Ⓑ. Common to chassis.	A1	Adjust for maximum deflection.
2.	"	"	22.2 MC	"	"	A2	"
3.	"	"	24.5MC	"	"	A3	"
4.	"	"	25MC	"	"	A4, A5	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to an ungrounde tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC Swp.)	21.25MC 25.75 MC	Any	Vert. Amp. to point Ⓑ Low side to chassis.		Check for response curve similar to Fig. 1. If necessary retouch A1 thru A5 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	5MMF	High side to point Ⓒ. Low side to chassis.	4.5MC (unmod)	Any	DC probe to point Ⓒ. Common to chassis.	A6, A7	Adjust for maximum deflection
7.	"	"	"	"	DC probe to point Ⓓ. Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60v and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	5MMF	High side to point Ⓐ. Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point Ⓒ. Low side to chassis	A6, A7	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per Fig. 2.
7.	"	"	"	"	"	Vert. Amp. to point Ⓓ. Low side to chassis.	A8	Reconnect capacitor C8. Adjust A8 so 4.5MC occurs at center of crossover lines as per Fig. 3. SLIGHTLY retouch A7 for Maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
Set the fine tuning control to the mid-position of its range.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50Ω.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213 MC (10MC Swp)	211.25 MC 215.75MC	13	Vert. Amp. to point Ⓑ. Low side to chassis	A9	Adjust to place video marker at 50% on response curve as shown in Fig. 4.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A10	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A11	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A12	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A13	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A14	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A15	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A16	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A17	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A18	
			63MC (10MC Swp)	61.25MC 65.75 MC	3		A19	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A20	

THE RF AND MIXER PORTION OF THIS TUNER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION IS NOT RECOMMENDED IN THE FIELD.

RADIO ALIGNMENT INSTRUCTIONS

	AM ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT Turn the function selector switch to RADIO, (center). The signal generator output lead should be terminated with its characteristic impedance, usually 50Ω.							
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
9.	.01MFD	High side to green lead on antenna. Low side to chassis.	455KC (400~)mod.	AM	Tuning gang fully open.	Across voice coil.	A21, A22 A23, A24	Adjust for maximum output.
10.		Loop	1620KC	"	"	"	A25	Fashion loops of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
11.		"	1400KC	"	Tune for maximum output.	"	A26	"

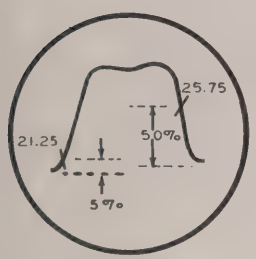


FIG. 1

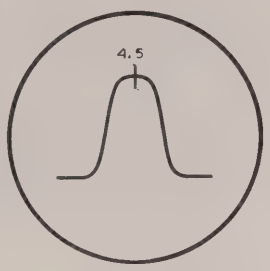


FIG. 2

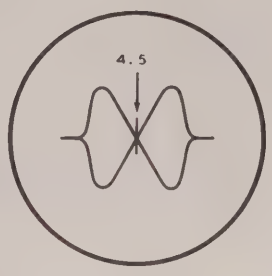


FIG. 3

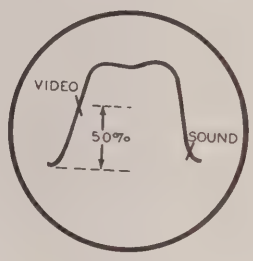
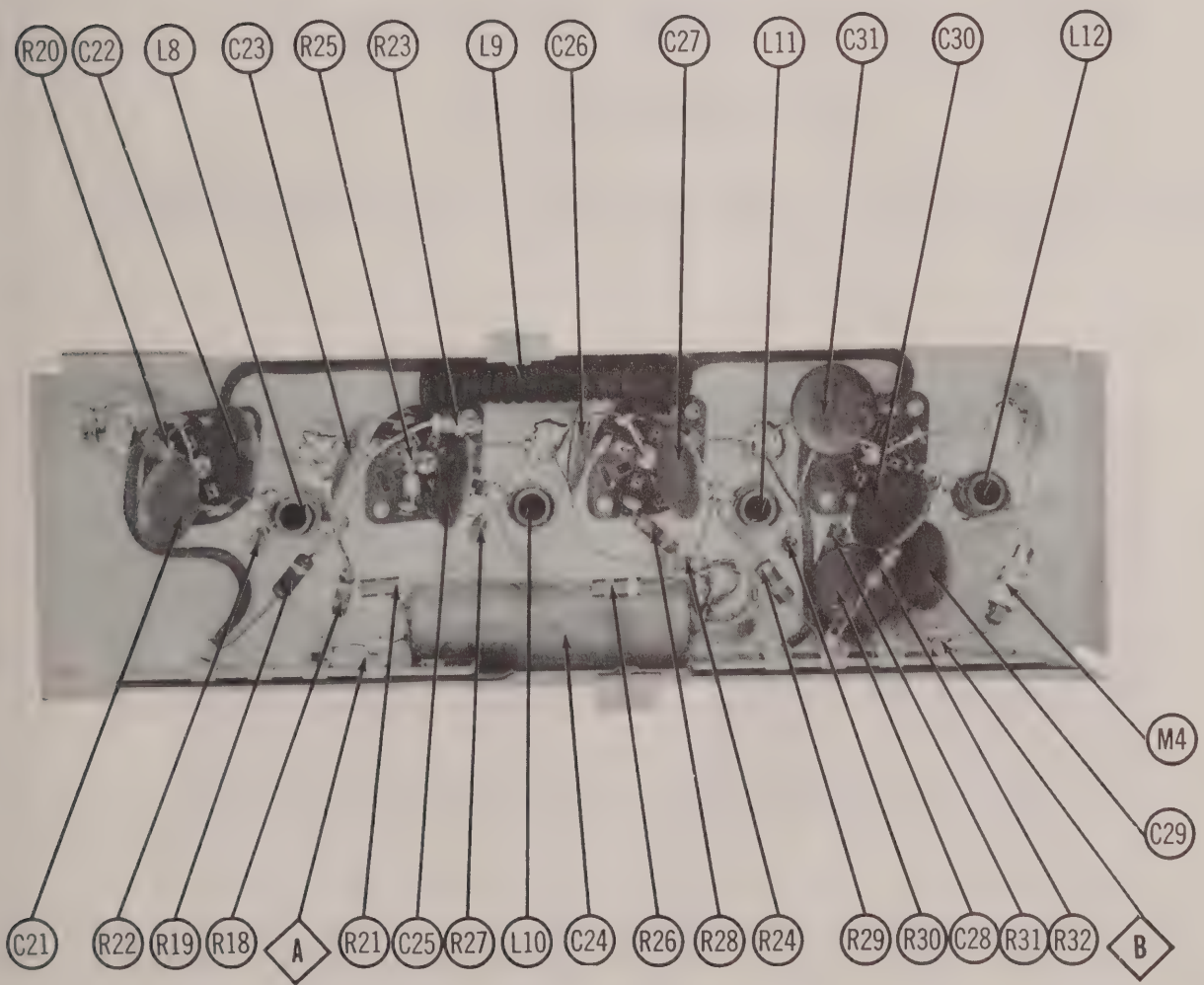
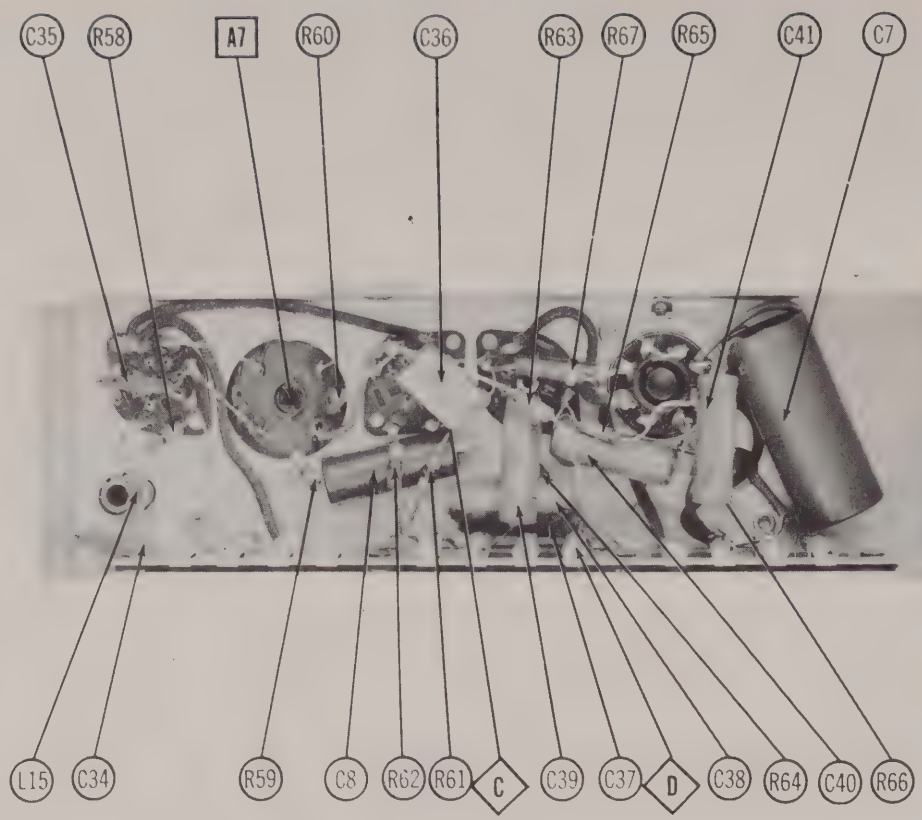


FIG. 4

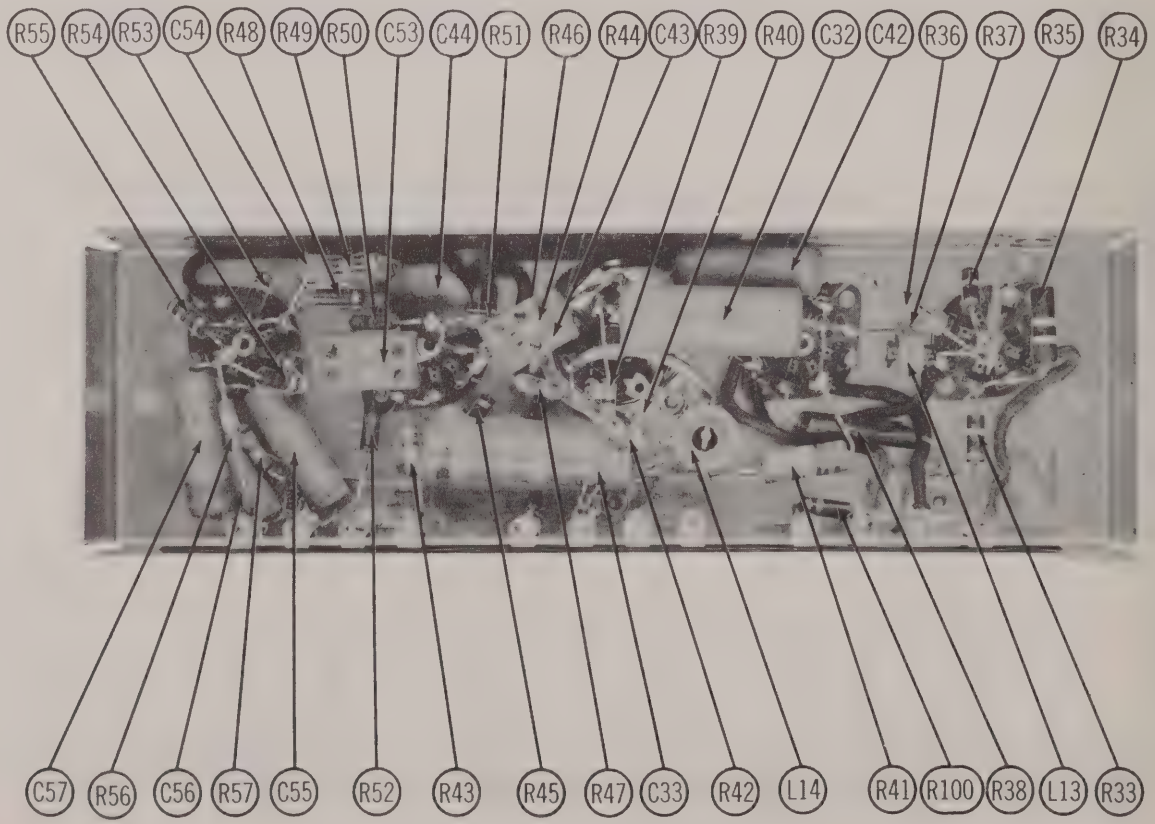


SUB-CHASSIS B1

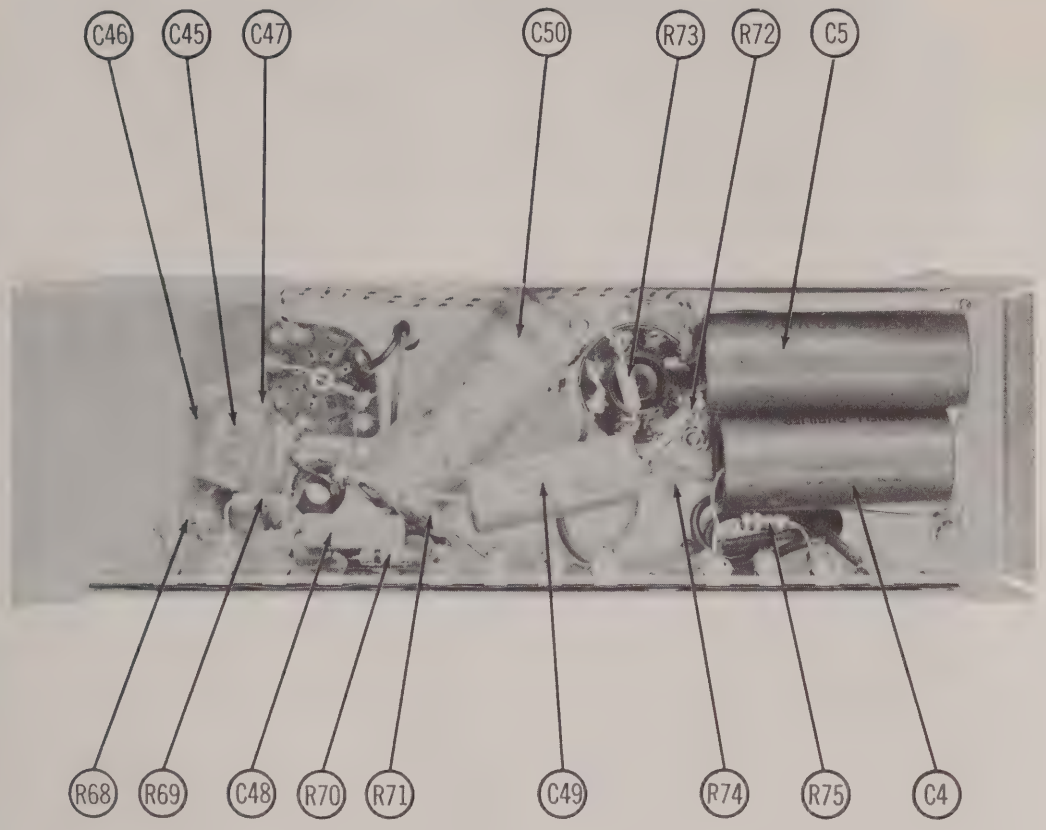
SETCHELL-CARLSON MODEL 151



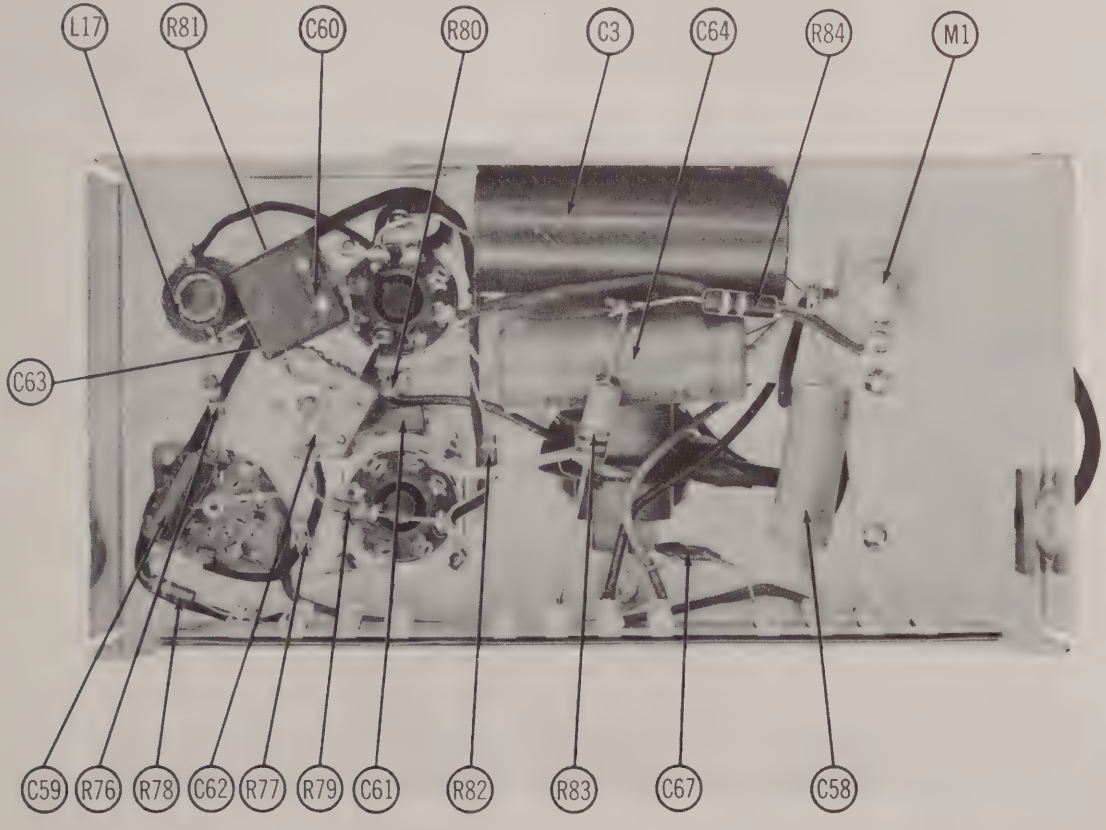
SUB-CHASSIS C1



SUB-CHASSIS D2



SUB-CHASSIS E2



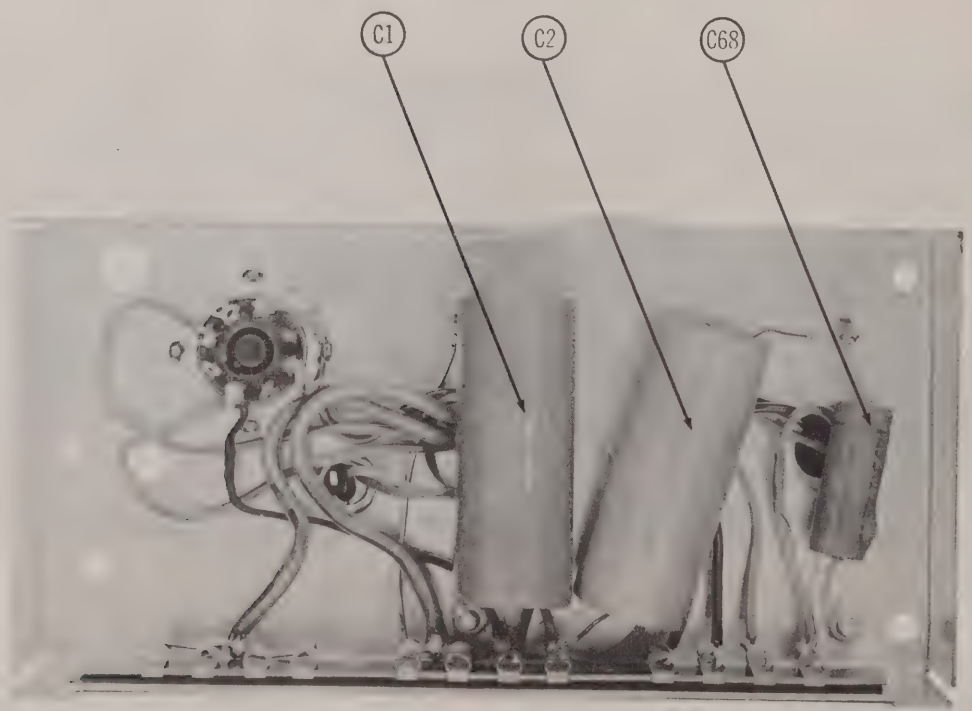
SUB-CHASSIS F4

RESISTANCE MEASUREMENTS

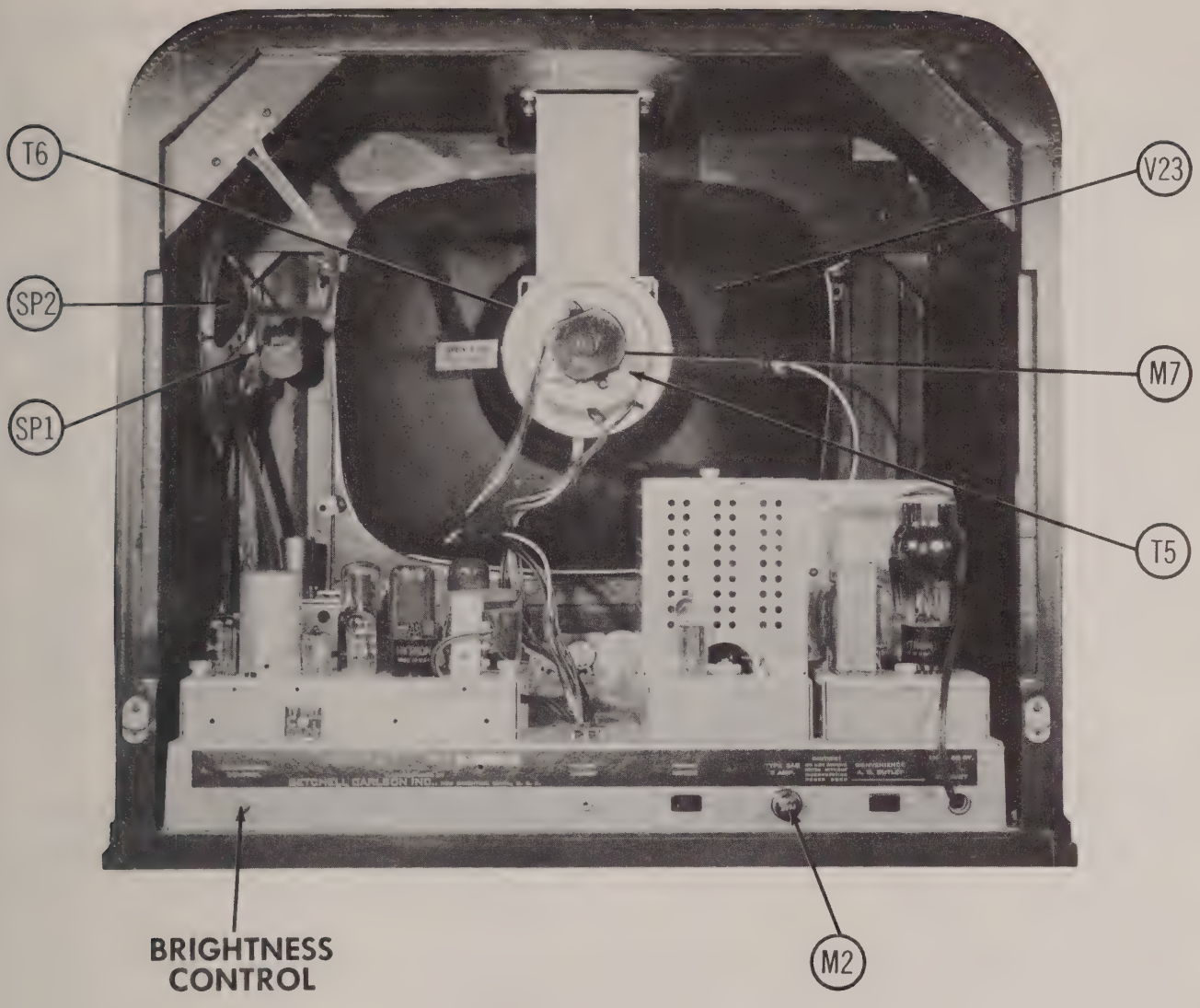
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	120KΩ	0Ω	.1Ω	0Ω	†4.6KΩ	†4.6KΩ	0Ω		
V 2	6J6	†7.1KΩ	†17KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6AU6	50KΩ	0Ω	.1Ω	0Ω	†2.8KΩ	†2.8KΩ	82Ω		
V 4	6AU6	47KΩ	0Ω	.1Ω	0Ω	†2.6KΩ	†2.6KΩ	82Ω		
V 5	6AU6	47KΩ	0Ω	.1Ω	0Ω	†2.4KΩ	†2.4KΩ	82Ω		
V 6	6AU6	.6Ω	0Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	180Ω		
V 7	6AU6	2.7KΩ	0Ω	0Ω	.1Ω	†6.1KΩ	†2.3KΩ	24Ω		
V 8	6K6GT	Inf.	0Ω	†5.5KΩ	†2.3KΩ	1Meg	2.4Meg	.1Ω	800Ω	
V 9	6AU6	†30KΩ	†2.3KΩ	1.6Ω	.1Ω	275KΩ	275KΩ	†2.3KΩ		
V 10	6AU6	1Meg	0Ω	0Ω	.1Ω	†2.7KΩ	†2.7KΩ	0Ω		
V 11	6AL5	Inf.	Inf.	.1Ω	0Ω	8.2KΩ	0Ω	8.2KΩ		
V 12	6AV6	5Meg	0Ω	0Ω	.1Ω	Inf.	Inf.	†270KΩ		
V 13	6V6GT	0Ω	0Ω	†2.6KΩ	†2.3KΩ	1Meg	†2.3KΩ	.1Ω	270Ω	
V 14	12BH7	†8.3KΩ	2.2Meg	2.7KΩ	.1Ω	.1Ω	†60KΩ	2.2Meg	0Ω	0Ω
V 15	6C4	†1Meg	Inf.	0Ω	.1Ω	†1Meg	1.8Meg	0Ω		
V 16	6V6GT	11KΩ	0Ω	†985Ω	†985Ω	4.7Meg	Inf.	.1Ω	2.7KΩ	
V 17	6AL5	27KΩ	27KΩ	0Ω	.1Ω	4.9Meg	0Ω	4.9Meg		
V 18	12BH7	†4.2KΩ	5.1Meg	1.5KΩ	0Ω	0Ω	†220KΩ	180K	1.5KΩ	.1Ω
V 19	6BQ6GT	†250Ω	.1Ω	Inf.	†60KΩ	470KΩ	1.5Ω	0Ω	0Ω	TOP CAP #30Ω
V 20	6W4GT	Inf.	Inf.	Inf.	Inf.	†280Ω	Inf.	▲.1Ω	▲0Ω	
V 21	1X2A	PIN 1 THROUGH 9 HAVE INF. RESISTANCE								TOP CAP #300Ω
V 22	5U4G	Inf.	40KΩ	Inf.	60Ω	Inf.	60Ω	Inf.	40KΩ	
V 23	17BP4A	0Ω	570KΩ	PIN 10 †38Ω	PIN 11 300KΩ	PIN 12 .1Ω				
V 24	6BA6	3.7Meg	0Ω	0Ω	■.1Ω	■†12KΩ	■†34KΩ	0Ω		
V 25	6BE6	27KΩ	.5Ω	0Ω	■.1Ω	■†12KΩ	■†34KΩ	2.7Meg		
V 26	6BA6	2.7Meg	0Ω	0Ω	■.1Ω	■†2.3KΩ	■†34KΩ	0Ω		

ALL MEASUREMENTS TAKEN IN TV POSITION UNLESS NOTED
ALL CONTROLS SET FOR NORMAL OPERATION
†MEASURED FROM PIN 8 OF V22
MEASURED FROM PIN 3 OF V20
■ MEASURED IN AM RADIO POSITION
▲ MEASURED FROM PIN 8 OF V20



SUB-CHASSIS G2



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), clockwise as far as possible without crowding or bright vertical lines appearing in the picture.

Adjust the picture width by sliding the metal sleeve on the picture tube neck into, or out of, the deflection yoke until the picture is slightly wider than necessary to fill the mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs and dial pointers.
2. Remove two phillips head screws from brackets securing rear cover to cabinet. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Disconnect yoke cable.
7. Remove picture tube socket.
8. Disconnect high voltage lead.
9. Remove two metal screws from botton rear of chassis.
10. Remove two 1/4" hex nuts from speaker. Remove speaker.

Note: For picture tube removal it is necessary to remove the chassis as outlined above.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier		6CB6	7CM	
B	RF Amplifier		6AG5	7BD	
V2	Converter		6J6	7BF	
V3	1st. Video IF Amp.		6AU6	7BK	
V4	2nd. Video IF Amp.		6AU6	7BK	
V5	3rd. Video IF Amp.		6AU6	7BK	
V6	4th. Video IF Amp.		6AU6	7BK	
V7	Video Amplifier		6AU6	7BK	
V8	Video Output		6K6GT	7S	
V9	Keyed AGC		6AU6	7BK	
V10	Sound IF Amp.		6AU6	7BK	
V11	Ratio Detector		6AL5	6BT	
V12	AF Amplifier		6AU6	7BK	
V13	Audio Output		6V6GT	7AC	
V14	Sync. Amplifier Sync. Phase Inv.		12BH7	9A	
V15	Vert. Oscillator		6C4	6BG	
V16	Vert. Output		6V6GT	7AC	
V17	Horiz. Phase Det.		6AL5	6BT	
V18	Horiz. Mult.		12BH7	9A	
V19	Horiz. Output		6BQ6GT	6AM	
V20	Damper		6W4GT	4CG	
V21	HV Rectifier		1X2A	9Y	
V22	LV Rectifier		5U4G	5T	
V24	RF Amplifier		6BA6	7BK	
V25	Converter		6BE6	7CH	
V26	IF Amplifier		6BA6	7BK	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: THOMAS PART No.	RTMA BASE TYPE	NOTES
V23A	17BP4A	17BP4A	17BP4	12D	
B	20CP4A	20CP4A	20CP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	40	450		PRS450/40		BR4045A		TVA-1712	Filter
C2	40	450		PRS450/40		BR4045A		TVA-1712	Filter
C3	40	450		PRS450/40		BR4045A		TVA-1712	Decoupling
C4	10	450		PRS450/10		BR1045A		TVA-1705	Vert. Output Dec.
C5	100	50		PRS50/100		BRH50I		TVA-1310	Vert. Output Cathode
C6	10	450		PRS450/10		BR1045A		TVA-1705	Decoupling
C7	10	450		PRS450/10		BR1045A		TVA-1705	Audio Output Dec.
C8	4	50		PRS150/4		BR550		TVA-1303	Stabilizing
C9	3-9				829-10				Variable Trimmer
C10	.5-3				829-5				Variable Trimmer
C11	120			SI120	D6-121		GP2K-121	5GA-T12	RF Amp. Decoupling
C12	100			SI100	D6-101		GP1K-101	5GA-T1	RF Amp. Filament
C13	100			SI100	D6-101		GP1k-101	5GA-T1	RF Coupling
C14	.5-3				829-3				Variable Trimmer
C15	30			SI30NP0	TCZ-30		NP0K-300		Osc. Grid Cap.
C16	10			SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C17	.5-3				829-3				Variable Trimmer
C18A	1000			BPD-2X001	DD-2-103		812-001	5HK-2D1	Conv. Fil.
B	1000								RF Bypass
C19	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C20	120			SI120	D6-121		GP2K-121	5GA-T12	IF Coupling
C21	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	1st. Video IF Dec.
C22	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	1st. Video IF Fil.
C23	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	AGC Filter
C24	.5	200		P288-5		GT2P5		2TM-P5	AGC Filter
C25	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	2nd. Video IF Dec.
C26	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	AGC Filter
C27	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	3rd. Video IF Dec.
C28	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	RF ByPass
C29	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	4th. Video IF Dec.
C30	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	4th. Video IF Cathode
C31	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	4th. Video IF Fil.
C32	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Video Coupling
C33	.1	600		P688-1		DF-104	PTE6P1	6TM-P1	Video Coupling
C34	20	500		SI20		5W5Q2	GP1K-200	MS-42	Sound IF Coupling
C35	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sound IF Dec.
C36	910	500		1464-0009		2R5T9		MS-39	Diode Load Cap.
C37	.0025	400		P688-0022	D6-252	PTE6D2	GP2-333-252	6TM-D22	De-Emphasis
C38	.01	400		P488-01	D8-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C39	.01	400		P488-01	D8-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C40	.01	400		P488-01	D8-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C41	.005	400		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C42	.0025	500		P688-0022	D8-252	PTE6D2	GP2-333-252	6TM-D22	Sync. Coupling
C43	250	500		1468-00025	D6-251	5W5T25	GP2K-251	1FM-325	Sync. Coupling
C44	10000			BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sync. Coupling
C45	910	500		1464-0009		2R5T9		MS-39	Vert. Integrator Net.
C46	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Vert. Integrator Net.
C47	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Vert. Integrator Net.
C48	5000	500		1464-005		1DR5D5		HS-25	Vert. Osc. Grid Cap.
C49	.05	600		P688-05	DF-503	PTE6S5		6TM-S5	Vert. Discharge
C50	.25	600		684-25		GP6P25		6TM-P25	Vert. Sweep Coupling
C51	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Vert. Sweep Coupling
C52	.25	400		P488-25		GT4P25		4TM-P25	Integrator Net.
C53	910	500		1464-0009		2R5T9		MS-39	Horiz. Sync. Coupling
C54	910	500		1464-0009		2R5T9		MS-39	Horiz. Sync. Coupling
C55	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Horiz. Feedback
C56	.01	400		P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Voltage Divider
C57	.005	400		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	AFC Coupling

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C58	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Horiz. MV Grid
C59	270	500		1469-0003		5R5T3		MS-33	Horiz. MV Feedback
C60	3900	500		1464-004		1DR5D4			Fixed Trimmer
C61	270	500		1469-0003		5R5T3		MS-33	Horiz. Discharge
C62	50	500		1469-00005		5R5Q5		MS- 45	Horiz. Feedback
C63	20	500				5R5Q2		MS-42	Horiz .Output Grid
C64	.25	400		P488-25		GT4P25		4TM-P25	Horiz. Output Screen
C65	.1	1000		1684-1					Horiz. Sweep Coupling
C66	500	20000		HV20C	TV3-502				HV Filter
C67	250			SI250	D6-251	5W5T25	GP2K-251	5GA-T25	Horiz. Feedback
C68	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C69	.0025	400		P688-0022	D6-252	PTE6D2	GP2-333-252	6TM-D22	Tone Comp.
C70	.05	200		P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C71	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	RF Amp. Plate Dec.
C72	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	RF Amp. Screen Bypass
C73	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C74	100			SI100	D6-101	5W5T1	GP1K-101	5GA-T1	Osc. Grid Cap.
C75	250			SI250	D6-251	5W5T25	GP2K-251	5GA-T25	Diode RF Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	TV1-60	Q13-133	AG-60-Z	B-60-S	Volume Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions
R2	3000Ω	2	MPMPX	W-3000	43-3000	VK-133	Focus Control Wire Wound
	Shaft			File slot	Not Req.	Not Req.	
R3A	100KΩ	½	TV1-82AOM	Q11-128	AG-498	B-40	Horizontal Hold Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Attach to R3A per instructions
R4A	4000Ω	½	TV1-61	Q11-114	AG-80-S	B-10	Vertical linearity control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Attach to R4A per instructions
R5A	2Meg	½	TV151-5	Q11-139	AG-83-S	B-75	Vertical Hold Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Attach to R5A per instructions
R6A	2Meg	½	TV151-5	Q11-139	AG-83-S	B-75	Height Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Attach to R6A per instructions
R7A	2Meg	½	TV151-5	Q11-139	AG-83-S	B-75	Brightness Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Attach to R7A per instructions
R8A	4000Ω	½	TV1-61	Q11-114	AG-80-S	B-10	Contrast Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R8A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	3900Ω 20%	½		BTS-3900	Antenna Coil Shunt
R10	47KΩ 20%	½		BTS-47K	AGC Network
R11	10KΩ	½		BTS-10K	RF Coil Shunt
R12	2200Ω 20%	½		BTS-2200	RF Amp. Decoupling
R13	4700Ω	½		BTS-4700	Mixer Grid
R14	220KΩ 20%	½		BTS-220K	Mixer Grid
R15	15KΩ 20%	½		BTS-15K	Mixer Plate Load
R16	10KΩ	½		BTS-10K	Oscillator Grid
R17	4700Ω	½		BTS-4700	Oscillator Plate Load
R18	27KΩ	½		BTS-27K	AGC Network
R19	3000Ω 5%	½		BTS-2700	1st. Video IF Grid See Note 1
R20	82Ω	½		BTS-82	1st. Video IF Cathode
R21	180Ω	½		BTS-180	1st. Video IF Decoupling
R22	22KΩ	½		BTS-22K	Video Coil Shunt See Note 2
R23	180Ω	½		BTS-180	AGC Network
R24	47KΩ	½		BTS-47K	AGC Network
R25	82Ω	½		BTS-82	2nd. Video IF Cathode
R26	180Ω	½		BTS-180	Decoupling
R27	8200Ω 20%	½		BTS-8200	Video Coil Shunt See Note 3
R28	82Ω	½		BTS-82	3rd. Video IF Cathode
R29	180Ω	½		BTS-180	Decoupling
R30	4700Ω	½		BTS-4700	Video Coil Shunt
R31	180Ω	½		BTS-180	4th. Video IF Cathode
R32	470Ω	½		BTS-470	4th. Video IF Decoupling
R33	2700	½		BTS-2700	Video Amp. Grid
R34	24Ω	½			Video Amp. Cathode
R35	3900Ω	½		BTS-3900	Video Amp. Plate Load
R36	8200Ω	½		BTS-8200	Isolation
R37	27KΩ	3		BTS-27K	Isolation
R38	3Ω	1			Filament Dropping Wire Wound
R39	1 Meg	½		BTS-1Meg	Video Output Grid
R40	470Ω	½		BTS-470	Video Output Cathode
R41	3300Ω	1		BTA-3300	Video Output Plate Load
R42	27KΩ	½		BTS-27K	Peaking Coil Shunt
R43	470KΩ	½		BTS-470K	Picture Tube Grid
R44	270KΩ	½		BTS-270K	Isolation
R45	2.2Meg	½		BTS-2.2Meg	Sync. Amp. Grid
R46	100KΩ	½		BTS-100K	Sync. Amp. Plate Load
R47	47KΩ	½		BTS-47K	Voltage Divider
R48	2.2Meg	½		BTS-2.2Meg	Sync. Phase Inverter Grid
R49	2700Ω	½		BTS-2700	Sync. Phase Inverter Cathode
R50	3000Ω 5%	½			Sync. Phase Inverter Plate Load
R51	3000Ω 5%	½			Sync. Phase Inverter Plate Load
R52	22KΩ 20%	½		BTS-22K	Integrator Network
R53	220KΩ	½		BTS-220K	Hor. Phase Detector Diode Load
R54	220KΩ	½		BTS-220K	Hor. Phase Detector Diode Load
R55	4.7Meg	½		BTS-4.7 Meg	Horiz. Phase Detector Diode Load
R56	470KΩ	½		BTS-470K	Horizontal AFC Filter
R57	27KΩ	½		BTS-27K	Horizontal AFC Filter
R58	1Meg	½		BTS-1 Meg	Sound IF Grid
R59	470Ω	½		BTS-470	Sound IF Decoupling
R60	180Ω	½		BTS-180	Balancing
R61	8200Ω	½		BTS-8200	Ratio Detector Diode Load
R62	8200Ω	½		BTS-8200	Ratio Detector Diode Load
R63	27KΩ	½		BTS-27K	De-Emphasis
R64	4.7Meg	½		BTS-4.7Meg	Audio Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R65	270KΩ	½		BTS-270K	Audio Amp. Plate Load
R66	1 Meg	½		BTS-1Meg	Audio Output Grid
R67	270Ω	1		BTA-270	Audio Output Cathode
R68	8200	½		BTS-8200	Integrator Network
R69	8200	½		BTS-8200	Integrator Network
R70	1 Meg	½		BTS-1Meg	Vertical Oscillator Grid
R71	470KΩ	½		BTS-470K	Vertical Osc. Plate Load
R72	8200Ω	½		BTS-8200	Vertical Peaking
R73	4.7 Meg	½		BTS-4.7Meg	Vertical Output Grid
R74	1500Ω	½		BTS-1500	Vertical Output Cathode
R75	47KΩ	½		BTS-47K	Decoupling
R76	3900Ω	½		BTS-3900	Horizontal MV Plate Load
R77	1500Ω	½		BTS-1500	Horizontal MV Cathode
R78	120KΩ	½		BTS-120K	Horizontal MV Grid See Note 4
R79	220KΩ	½		BTS-220K	Horizontal MV Plate Load
R80	82Ω 20%	1			Parasitic Suppressor
R81	470KΩ	½		BTA-470K	Horizontal Output Grid
T82	1Meg	½		BTS-1Meg	Decoupling
R83	10KΩ	1		BTA-10K	Horizontal AFC Feedback
R84	24Ω	½			Surge Limiter Wire Would
R85	470KΩ	½			HV Filter
R86	100KΩ	½		BTS-100K	Voltage Divider
R87	220KΩ	½		BTS-220K	Series Phono
R88	5.1Meg	½		BTS-4.7Meg	Picture Tube Cathode
R89	2000Ω	10		1 3/4A-2000	Voltage Dropping Wire Wound
R90	2000Ω	10		1 3/4A-2000	Voltage Dropping Wire Wound
R91	100Ω	10		1 3/4A-100	Voltage Dropping Wire Wound
R92	100Ω	10		1 3/4A-100	Voltage Dropping Wire Wound
R93	1 Meg	½		BTS-1Meg	AVC Network
R94	22KΩ	½		BTS-22K	Screen Dropping
R95	10KΩ	1		BTA-10K	Decoupling
R96	27KΩ	½		BTS-27K	AM Oscillator Grid
R97	22KΩ	½		BTS-22K	RF Coil Shunt
R98	2.2Meg	½		BTS-2.2Meg	AVC Network
R99	27KΩ	½		BTS-27K	Diode RF Filter See Note 5
R100	220KΩ	½		BTS-220K	AGC Network

Note 1 Some Models use a 1500Ω Resistor in this application
Note 2 Some Models use a 39KΩ Resistor in this application
Note 3 Some Models use a 4700Ω Resistor in this application
Note 4 Some Models use a 200KΩ Resistor in this application
Note 5 Some Models use a 22KΩ Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 1.7A	700VCT ② .225A	5VAC ③ 3.A	6.3VAC 1.2A SEC. 4 6.3VAC ④ 7.8A	M575			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	310Ω	1300Ω	M581		A-4000	TBO-1	Vert. Blocking Osc.
T3	300Ω tapped ② 4.5Ω &37Ω	8Ω tapped ② 1.5Ω 2.1Ω ③3Ω	70-83				Horiz. Output Trans.
T4	950Ω	1Ω	M572	A-8123	A-3036		Vertical Output Trans.
T5	310Ω						Focus Coil
T6A	10Ω			DY-8	MDF-70		Horiz. Deflection Coils
B	50Ω						Vertical Deflection Coils

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	5.5KΩ	3.5Ω	410Ω	.5Ω	M580	A-3877	A-2930		

SPEAKER

ITEM No.	RATINGS: FIELD RES.	RATINGS: V. C. IMP.	REPLACEMENT DATA: Setchell Carlson PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	PM	3.5Ω		ST-108 Mod. P6-X	6A1	
	CONE DIA.	V. C. DIA.				
SP2	6"	½"				

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	Setchell Carlson PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.225A	38Ω	2 Henries					

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Setchell Carlson PART No.	MERIT PART No.	
L2	Ant. Coil	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	RF Mixer Grid, Osc.	0Ω				
L5	Fil. Choke	0Ω				
L6	1st. Video IF	1Ω				
L7	Fil. Choke	0Ω				
L8	2nd. Video IF	.5Ω	.5Ω	B72A83-3		
L9	Fil. Choke	.1Ω				
L10	3rd. Video IF	.5Ω	.5Ω	B72A83-3		
L11	4th. Video IF	.5Ω	.5Ω	B72A83-3		
L12	5th. Video IF	.5Ω	.5Ω	B72A83-3		
L13	Peaking Coil	10.5Ω		D-2000	TV-185	
L14A	Peaking Coil	6.6Ω		TV-121-3		Both Coils wound on same form
B	Peaking Coil	5.7Ω		TV-121-3		
L15	Sound IF	6.5Ω		72A60-1	TV-161	
L16	Ratio Det. Trans.	4.2Ω	.8Ω	13M17273	TV-110	Tap ⓐ 1Ω
L17	Horiz. Osc.	49Ω		94A17	TV-163	
L18	AM Loop Ant.	.6Ω		HR-1		
L19	AM RF Coil	55Ω	24Ω	416BRF	BC-382	
L20	AM Osc. Coil	5.4Ω		416C	BC-400	Tap ⓐ 4.9Ω
L21	AM Input IF	11.5Ω	11.5Ω	570-455	BC-352	
L22	AM Output IF	11.5Ω	11.5Ω	570-455	BC-352	

SELENIUM RECTIFIER

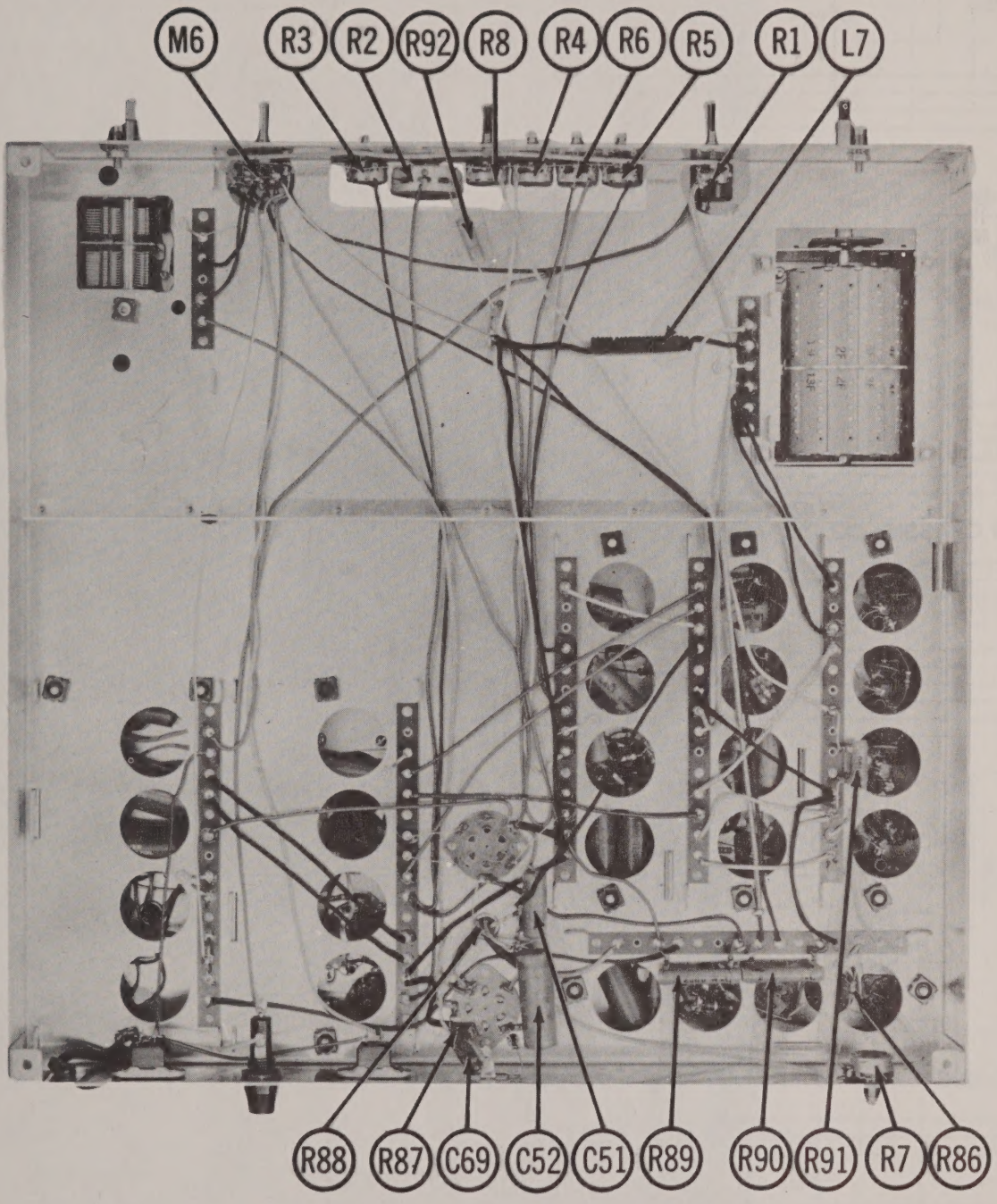
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	Setchell Carlson PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.028A		NB-5	8J1	

FUSES

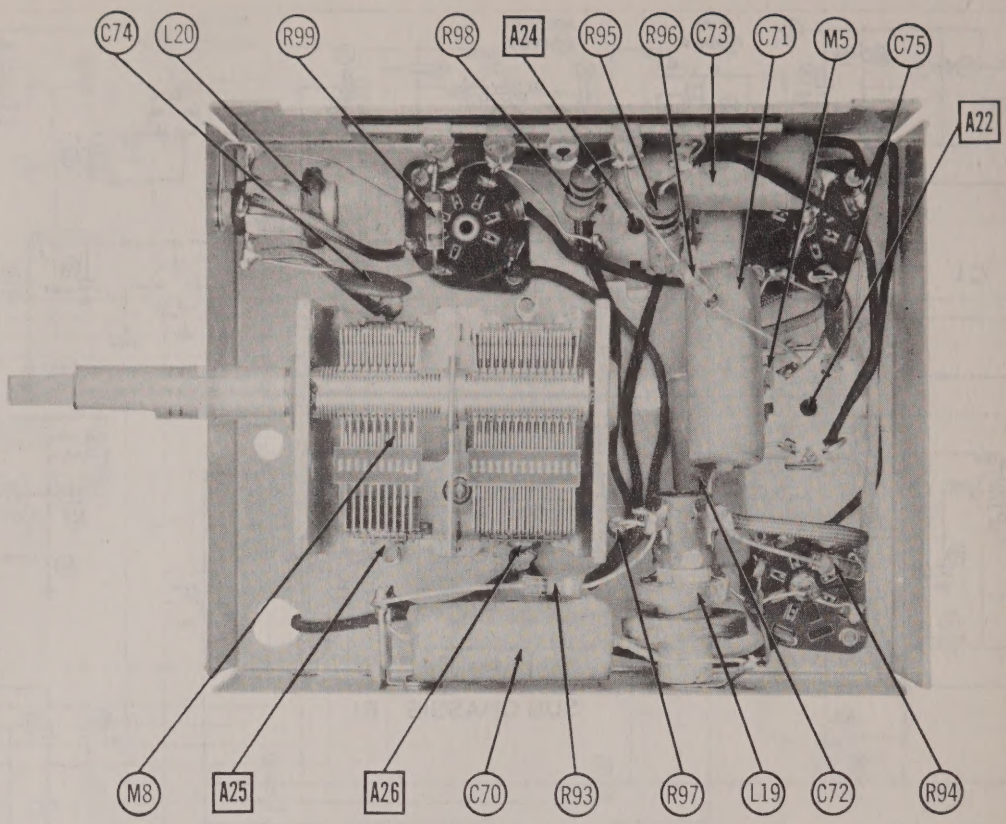
ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			Setchell Carlson PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M2	3AG	3A			312.003	342001	

MISCELLANEOUS

ITEM No.	PART NAME	Setchell Carlson PART No.	NOTES
M3	RF Tuner	TV-276	
M4	Crystal		1N60
M5	Crystal		1N60
M6	Switch		Function (Phono-Radio-TV
M7	Ion Trap		
M8	Tuning Cap	TV1-25	(37-437MMF, - 33-197MMF
B2	Trimmer	467	100-580MMF



MAIN CHASSIS-BOTTOM VIEW



SUB-CHASSIS H2